



TEST REPORT

Test Report # 17A-003864-1 Date of Report Issue: November 30, 2017
 Date of Sample Received: November 24, 2017 Pages: Page 1 of 14

CLIENT INFORMATION:

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



SAMPLE INFORMATION:

Product Name: Aluminum bottle
 Model/style No.: MO8287,MO9350
 Main Material: aluminum
 Buyer: Mid Ocean Brands B.V.
 Supplier: 100396
 Country of Distribution: EU
 Testing Period: 11/24/2017-11/30/2017

OVERALL RESULT:

PASS

Refer to page 2 for test result summary and appropriate notes.

HANGZHOU ASIAINSPECTION
 TECHNOLOGY CO., LTD

Kevin Lee

Kevin Lee
 Technical Manager





TEST REPORT

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TEST RESULTS SUMMARY:

At the request of the client, the following tests were conducted:

CONCLUSION	TEST(S) CONDUCTED
PASS	Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 63 Lead in Substrate Materials
PASS	Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 23 Cadmium in Substrate Materials
PASS	Regulation (EC) No. 1907/2006 REACH Annex XVII as Amended by Commission Regulation (EC) No. 835/2012, Item 23 Cadmium
PASS	Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 51 and 52 Phthalates – Mouthable (DBP, BBP, DEHP, DnOP, DINP, DIDP)
PASS	Regulation (EC) No 1935/2004, (EU) No 10/2011 and Council of Europe Resolution CM Res(2013)9 on metals and alloys used in food contact materials and articles - Specific release of heavy metals
PASS	Regulation (EC) No 1935/2004, (EU) No 10/2011 and its amendment (EU) 2016/1416- Overall migration
PASS	Regulation (EC) No 1935/2004, (EU) No 10/2011 and its amendment (EU) 2016/1416- Specific migration of heavy metals
PASS	Client's requirement, Bisphenol A content





DETAILED RESULTS:

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 63 Lead in Substrate Materials

Test Method: CPSC-CH-E1001-08.3 (Metal) and/or CPSC-CH-E1002-08.3 (Non-Metal)

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1	2	3	4	5	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	43	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Specimen No.	6	-	-	-	-	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	-	-	-	-	500
Conclusion	PASS	-	-	-	-	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)





DETAILED RESULTS:

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 23 Cadmium in Substrate Materials

Test Method: ASTM F963-16 Clause 8.3.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1	2	5	6	-	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Cadmium (Cd)	ND	ND	ND	ND	-	100
Conclusion	PASS	PASS	PASS	PASS	-	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)





DETAILED RESULTS:

Regulation (EC) No. 1907/2006 REACH Annex XVII as Amended by Commission Regulation (EC) No. 835/2012, Item 23 Cadmium

Test Method: EN 1122:2001 Method B
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.		3	4	-	-	Limit (mg/kg)
Test Item		Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Cadmium (Cd)	Trial 1	ND	ND	-	-	
	Trial 2	ND	ND	-	-	
	Mean	ND	ND	-	-	100
Conclusion		PASS	PASS	-	-	

Note:
mg/kg = Milligrams per kilogram
LT = Less than
ND = Not detected (Reporting Limit = 15 mg/kg)



**DETAILED RESULTS:****Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 51 and 52 Phthalates – Mouthable (DBP, BBP, DEHP, DnOP, DINP, DIDP)**

Test Method: CPSC-CH-C1001-09.3

Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		3	4	-	-	Limit (% m/m)
Test Item	CAS No.	Result (% m/m)	Result (% m/m)	Result (% m/m)	Result (% m/m)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	-	-	
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	-	-	
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	-	-	
Sum of DBP, BBP, DEHP		ND	ND	-	-	0.1
Di-n-octyl phthalate (DnOP)	117-84-0	ND	ND	-	-	
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	-	-	
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	-	-	
Sum of DnOP, DINP, DIDP		ND	ND	-	-	0.1
Conclusion		PASS	PASS	-	-	

Note:

% m/m = Percent by mass

LT = Less than

ND = Not detected (Reporting Limit = 0.015 % m/m)



**DETAILED RESULTS:****Regulation (EC) No 1935/2004, (EU) No 10/2011 and Council of Europe Resolution CM Res(2013)9 on metals and alloys used in food contact materials and articles - Specific release of heavy metals**

Test method: Sample preparation in 0.5%(5g/L) citric acid 70°C for 2hours, followed by analysis using ICP-OES&ICP-MS

Specimen No:	1					
Test Item(s)	Unit	MDL	1 st + 2 nd Migration		3 rd Migration	
			Result	7xSRL ^{*2}	Result	SRL ^{*1}
Aluminum (Al)	mg/kg	0.5	2.1	35	0.6	5
Antimony (Sb)	mg/kg	0.01	0.05	0.28	0.02	0.04
Chromium (Cr)	mg/kg	0.1	ND	1.75	ND	0.25
Cobalt (Co)	mg/kg	0.01	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	0.5	ND	12.6	ND	1.8
Molybdenum (Mo)	mg/kg	0.05	ND	0.84	ND	0.12
Nickel (Ni)	mg/kg	0.05	ND	0.98	ND	0.14
Silver (Ag)	mg/kg	0.05	ND	0.56	ND	0.08
Tin ^{*3} (Sn)	mg/kg	5	ND	700	ND	100
Titanium(Ti)	mg/kg	0.1	ND	-	ND	-
Vanadium (V)	mg/kg	0.005	ND	0.07	ND	0.01
Zinc (Zn)	mg/kg	0.5	ND	35	ND	5
Arsenic (As)	mg/kg	0.001	ND	0.014	ND	0.002
Barium (Ba)	mg/kg	0.1	ND	8.4	ND	1.2
Beryllium (Be)	mg/kg	0.005	ND	0.07	ND	0.01
Cadmium (Cd)	mg/kg	0.001	ND	0.035	ND	0.005
Lead (Pb)	mg/kg	0.005	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
Conclusion	PASS					

Note:

(1) mg/kg =milligram per kilogram

(2) SRL = Specific Release Limit

(3) *1 Compliance is established on the result from the third migration test for repeated used articles.

(4) *2 Meantime, the sum of the results of the first and second tests should not exceed 7 times the SRL

(5) *3 Except in field of application under Regulation (EC) No.1881/2006.(canned food container)



**DETAILED RESULTS:****Regulation (EC) No 1935/2004, (EU) No 10/2011 and Council of Europe Resolution CM Res(2013)9 on metals and alloys used in food contact materials and articles - Specific release of heavy metals**

Test method: Sample preparation in 0.5%(5g/L) citric acid 70°C for 2hours, followed by analysis using ICP-OES&ICP-MS

Specimen No:	2					
Test Item(s)	Unit	MDL	1 st + 2 nd Migration		3 rd Migration	
			Result	7xSRL ^{*2}	Result	SRL ^{*1}
Aluminum (Al)	mg/kg	0.5	2.2	35	0.6	5
Antimony (Sb)	mg/kg	0.01	0.03	0.28	ND	0.04
Chromium (Cr)	mg/kg	0.1	ND	1.75	ND	0.25
Cobalt (Co)	mg/kg	0.01	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	0.5	ND	12.6	ND	1.8
Molybdenum (Mo)	mg/kg	0.05	ND	0.84	ND	0.12
Nickel (Ni)	mg/kg	0.05	ND	0.98	ND	0.14
Silver (Ag)	mg/kg	0.05	ND	0.56	ND	0.08
Tin ^{*3} (Sn)	mg/kg	5	ND	700	ND	100
Titanium(Ti)	mg/kg	0.1	ND	-	ND	-
Vanadium (V)	mg/kg	0.005	ND	0.07	ND	0.01
Zinc (Zn)	mg/kg	0.5	ND	35	ND	5
Arsenic (As)	mg/kg	0.001	ND	0.014	ND	0.002
Barium (Ba)	mg/kg	0.1	ND	8.4	ND	1.2
Beryllium (Be)	mg/kg	0.005	ND	0.07	ND	0.01
Cadmium (Cd)	mg/kg	0.001	ND	0.035	ND	0.005
Lead (Pb)	mg/kg	0.005	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
Conclusion	PASS					

Note:

(1) mg/kg =milligram per kilogram

(2) SRL = Specific Release Limit

(3) *1 Compliance is established on the result from the third migration test for repeated used articles.

(4) *2 Meantime, the sum of the results of the first and second tests should not exceed 7 times the SRL

(5) *3 Except in field of application under Regulation (EC) No.1881/2006.(canned food container)

(6) Colour fading of come from Golden metal when tested.





DETAILED RESULTS:

Regulation (EC) No 1935/2004, (EU) No 10/2011 and its amendment (EU) 2016/1416-Overall migration

Test method: EN1186-1:2002: for selection of conditions and test methods
EN1186-3:2002: aqueous food simulants by total immersion

Specimen No.		3	4	-	Maximum permissible Limit (mg/dm ²)
Simulant used	Test condition	Result (mg/dm ²)	Result (mg/dm ²)	Result (mg/dm ²)	
3% acetic acid	2 hours at 70°C	ND	ND	-	10
50% ethanol	2 hours at 70°C	ND	ND	-	10
Conclusion		PASS	PASS	-	

Note:

mg/dm² = milligram per square decimeter

ND = Not Detected (Reporting limit = 3 mg/dm²)

The overall migration value is expressed in mg/dm² applying the total contact surface of sealing article and sealed container





DETAILED RESULTS:

Regulation (EC) No 1935/2004, (EU) No 10/2011 and its amendment (EU) 2016/1416-Specific migration of heavy metals

Test method: Sample preparation in 3% acetic acid at 70°C for 2hours & US EPA 6020B:2014

Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Specimen No.		3	-	-	-	Maximum permissible Limit (mg/kg)
Test Item	Detection limit	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Barium	0.1	ND	-	-	-	1
Cobalt	0.05	ND	-	-	-	0.05
Copper	0.5	ND	-	-	-	5
Iron	1.0	ND	-	-	-	48
Lithium	0.1	ND	-	-	-	0.6
Manganese	0.1	ND	-	-	-	0.6
Zinc	1.0	ND	-	-	-	5
Aluminum	0.1	ND	-	-	-	1
Nickel	0.01	ND	-	-	-	0.02
Conclusion		PASS	-	-	-	

Note:

mg/kg=milligram per kilogram

ND= Not Detected

The specific migration values use the actual content of the container for which the closure is intended

Container volume: 350mL





DETAILED RESULTS:

Client's requirement, Bisphenol A content

Test method: US EPA 3550C:2007 & US EPA 8270D:2014
Analytical Method: Gas Chromatography-Mass Spectrometer

Sample No.:	3	4	-	-	-	Client's limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Bisphenol A (BPA)	ND	ND	-	-	-	Not Detected
Conclusion	PASS	PASS	-	-	-	

Note:
mg/kg=milligram per kilogram
ND=Not Detected(Reporting limit = 0.1mg/kg)



**SPECIMEN DESCRIPTION:**

Specimen No.	Specimen Description	Location
1	Golden metal(Aluminum)	Inner of rim- small red bottle
2	Silver metal(Aluminum)	Inner of bottle- small red bottle
3	Black PP	Lid- small red bottle
4	Translucent silicone	Silicone ring- small red bottle
5	Silver metal(iron)	Metal ring- small red bottle
6	Silver metal(Aluminum)	Carabiner- small red bottle



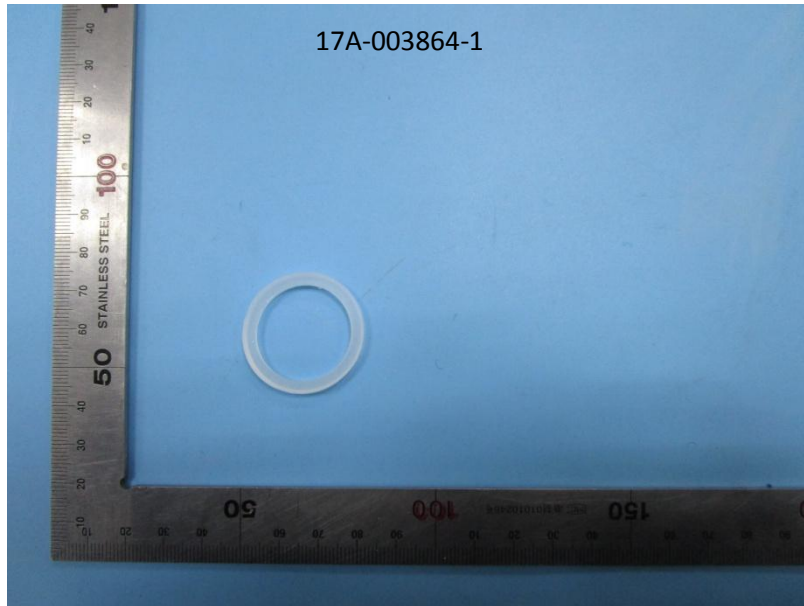


SAMPLE PHOTO:





SAMPLE PHOTO:



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