

Test Report

Report No.: AGC02281190602-001S1

Date: Jun.21, 2019

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Applicant: Mid Ocean Brands B.V.
Address: Wellensiekstraat 2, 6718 XZ Ede, The Netherlands
Test site: 1,6/F.,Building 2,No. 1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang,
Baoan District, Shenzhen, Guangdong, China

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

Sample Name: Opener with LED torch

Model No.: MO8142

Country of Origin: CHINA

Country of Destination: EUROPE

Manufacturer:

Address:

Sample Received Date: Jun.12, 2019

Testing Period: Jun.12, 2019 to Jun.18, 2019

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

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

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

Approved by

Liulinwen, Lewis

Technical Director



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Test Requested:

- As specified by client, to determine the Pb, Cd, Hg, Cr⁶⁺, PBBs, PBDEs content in the submitted sample in accordance with EU RoHS Directive 2011/65/EU(RoHS) and its amendment directives on XRF and Chemical Method.
- As specified by client, to determine the DBP, BBP, DEHP, DIBP content in the submitted sample in accordance with Directive 2011/65/EU (RoHS) and its amendment directive (EU) 2015/863.

Conclusion

Pass

Pass

Test Methods:

A: Screening by X-ray Fluorescence Spectrometry (XRF) :With reference to IEC 62321-3-1:2013 Ed 1.0 Screening – Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry

B: Chemical test:

Test Item	Test Method	Measuring Instrument	MDL
Cadmium (Cd)	IEC 62321-5:2013 Ed 1.0	ICP-OES	2 mg/kg
Lead (Pb)	IEC 62321-5:2013 Ed 1.0	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321-4: 2013+A1:2017 Ed 1.1	ICP-OES	2 mg/kg
Non-metal Hexavalent Chromium (Cr ⁶⁺)	IEC 62321-7-2:2017 Ed 1.0	UV-Vis	1 mg/kg
Metal Hexavalent Chromium (Cr ⁶⁺)	IEC 62321-7-1:2015 Ed 1.0	UV-Vis	/
PBBs/PBDEs	IEC 62321-6:2015 Ed 1.0	GC-MS	5 mg/kg

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Test Results:
A. EU RoHS Directive 2011/65/EU and its amendment directives on XRF

Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
1	Silver metal shell	BL	BL	BL	BL	-
2	White plastic button	BL	BL	BL	BL	BL
3	Silver chain(key chain)	BL	BL	BL	BL	-
4	Silvery metal ring(key chain)	BL	BL	BL	BL	-
5	Silver metal key ring(key chain)	BL	BL	BL	BL	-
6	Black rubber button	BL	BL	BL	BL	BL
7	Silver metal washer	BL	BL	BL	BL	-
8	Silver metal spring	BL	BL	BL	BL	-
9	Button battery	BL	BL	BL	BL	BL
10	Transparent sleeving	BL	BL	BL	BL	BL
11	Green aluminum shell(aluminum shell)	BL	BL	BL	BL	-
12	Black aluminum shell(aluminum shell)	BL	BL	BL	BL	-
13	Orange aluminum shell(aluminum shell)	BL	BL	BL	BL	-
14	Blue aluminum shell(aluminum shell)	BL	BL	BL	BL	-
15	Yellow aluminum shell(aluminum shell)	BL	BL	BL	BL	-
16	Red aluminum shell(aluminum shell)	BL	BL	BL	BL	-
17	Silver plastic shade	BL	BL	BL	BL	BL
18	LED lamp(lamp board)	BL	BL	BL	BL	X*
19	Metal rand(lamp board)	BL	BL	BL	BL	-
20	Metal spring(lamp board)	BL	BL	BL	BL	-
21	Tin solder(lamp board)	BL	BL	BL	BL	-
22	PCB board(lamp board)	BL	BL	BL	BL	X*

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Element	Unit	Non-metal	Metal	Composite Material
Cd	mg/kg	$BL \leq 70-3\sigma < X$ $< 130+3\sigma \leq OL$	$BL \leq 70-3\sigma < X$ $< 130+3\sigma \leq OL$	$BL \leq 50-3\sigma < X$ $< 150+3\sigma \leq OL$
Pb	mg/kg	$BL \leq 700-3\sigma < X$ $< 1300+3\sigma \leq OL$	$BL \leq 700-3\sigma < X$ $< 1300+3\sigma \leq OL$	$BL \leq 500-3\sigma < X$ $< 1500+3\sigma \leq OL$
Hg	mg/kg	$BL \leq 700-3\sigma < X$ $< 1300+3\sigma \leq OL$	$BL \leq 700-3\sigma < X$ $< 1300+3\sigma \leq OL$	$BL \leq 500-3\sigma < X$ $< 1500+3\sigma \leq OL$
Cr	mg/kg	$BL \leq 700-3\sigma < X$	$BL \leq 700-3\sigma < X$	$BL \leq 500-3\sigma < X$
Br	mg/kg	$BL \leq 300-3\sigma < X$	-	$BL \leq 250-3\sigma < X$

Note: BL= Below Limit

OL= Over limited

X= Inconclusive

“-“= Not regulated

*= Scanning by XRF and detected by chemical method. The test results of chemical method please refer to next pages.

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Remark:

- i Results were obtained by XRF for primary scanning, and further chemical testing by ICP (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the above warning value according to IEC 62321-3-1:2013 Ed 1.0.
- ii The XRF scanning test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.
- iii The maximum permissible limit is quoted from RoHS directive 2011/65/EU:

RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)
Cadmium (Cd)	100
Lead (Pb)	1000
Mercury (Hg)	1000
Hexavalent Chromium (Cr(VI))	1000
Polybrominated biphenyls (PBBs)	1000
Polybrominated diphenylethers (PBDEs)	1000

Disclaimers:

This XRF Scanning report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes.

The result shown in this XRF scanning report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

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B、The Test Results of Chemical Method:

1) The Test Results of PBBs & PBDEs

Unit: mg/kg

Item(s)	MDL	Result(s)		Limit
		18	22	
Polybrominated Biphenyls (PBBs)				
Monobromobiphenyl	5	N.D.	N.D.	Total PBBs Content <1000
Dibromobiphenyl	5	N.D.	N.D.	
Tribromobiphenyl	5	N.D.	N.D.	
Tetrabromobiphenyl	5	N.D.	N.D.	
Pentabromobiphenyl	5	N.D.	N.D.	
Hexabromobiphenyl	5	N.D.	N.D.	
Heptabromobiphenyl	5	N.D.	N.D.	
Octabromobiphenyl	5	N.D.	N.D.	
Nonabromodiphenyl	5	N.D.	N.D.	
Decabromodiphenyl	5	N.D.	N.D.	
Total content	/	N.D.	N.D.	
Polybrominated Diphenylethers (PBDEs)				
Monobromodiphenyl ether	5	N.D.	N.D.	Total PBDEs Content <1000
Dibromodiphenyl ether	5	N.D.	N.D.	
Tribromodiphenyl ether	5	N.D.	N.D.	
Tetrabromodiphenyl ether	5	N.D.	N.D.	
Pentabromodiphenyl ether	5	N.D.	N.D.	
Hexabromodiphenyl ether	5	N.D.	N.D.	
Heptabromodiphenyl ether	5	N.D.	N.D.	
Octabromodiphenyl ether	5	N.D.	N.D.	
Nonabromodiphenyl ether	5	N.D.	N.D.	
Decabromodiphenyl ether	5	N.D.	N.D.	
Total content	/	N.D.	N.D.	
Conclusion	/	Pass	Pass	/

Note: N.D. = Not Detected or less than MDL
 mg/kg = parts per million
 MDL = Method Detection Limit

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2.Test result of DBP, BBP, DEHP, DIBP content

Unit: mg/kg

Test Item(s)	Test Method/ Equipment	MDL	Result(s)				Limit
			2	6	9	10	
Di-(2-ethylhexyl) Phthalate (DEHP)	IEC 62321-8:2017 GC-MS	50	N.D.	N.D.	N.D.	N.D.	1000
Dibutyl phthalate (DBP)		50	N.D.	N.D.	N.D.	N.D.	1000
Butylbenzyl phthalate (BBP)		50	N.D.	N.D.	N.D.	N.D.	1000
Di-iso-butyl phthalate (DIBP)		50	N.D.	N.D.	N.D.	N.D.	1000
Conclusion		/	Pass	Pass	Pass	Pass	/

Unit: mg/kg

Test Item(s)	Test Method/ Equipment	MDL	Result(s)			Limit
			17	18	22	
Di-(2-ethylhexyl) Phthalate (DEHP)	IEC 62321-8:2017 GC-MS	50	N.D.	N.D.	N.D.	1000
Dibutyl phthalate (DBP)		50	N.D.	N.D.	N.D.	1000
Butylbenzyl phthalate (BBP)		50	N.D.	N.D.	N.D.	1000
Di-iso-butyl phthalate (DIBP)		50	N.D.	N.D.	N.D.	1000
Conclusion		/	Pass	Pass	Pass	/

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

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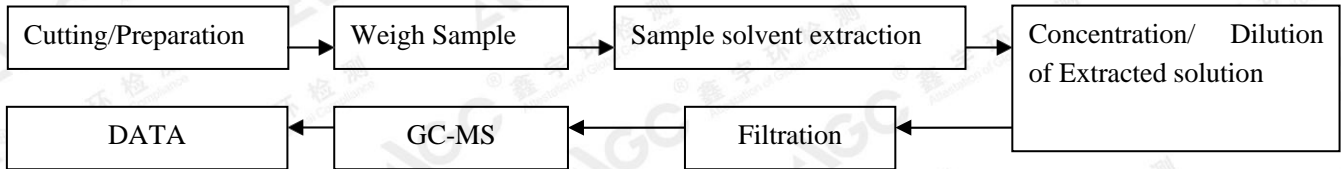
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Test Flow Chart

1. For PBBs, PBDEs, DBP, BBP, DEHP, DIBP

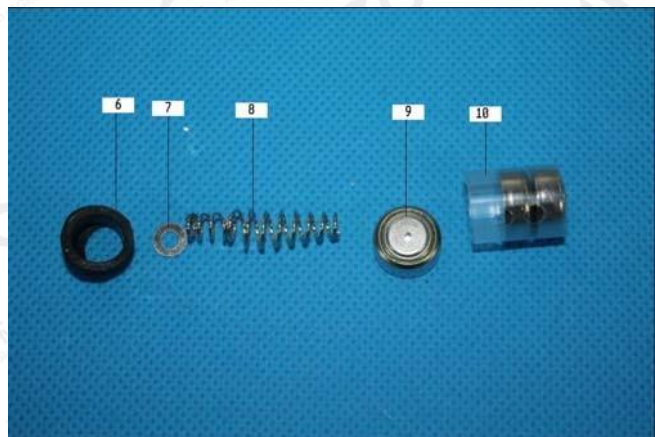


This report is to supersede the report with No.: AGC02281190602-001 dated on Jun.18, 2019.

The photo of the sample



1



2



3



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AGC authenticate the photo only on original report

*** End of Report ***

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