



TEST REPORT

Report No.: STR17086021R

Date: 2017-08-04

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Applicant : Mid Ocean Brands B.V.

Applicant Address : Unit 201 2F., Laford Centre, 838 Lai Chi Kok Road, Cheung Sha Wan, Kowloon, HongKong

The following sample was submitted by the client as:

Manufacturer :
Address :

Sample Description : Spherical mini speaker

Style/Item No. : MO8172

Brand Name : N/A

Sample Receiving Date : Aug. 01, 2017


Test Period : Aug. 01, 2017 to Aug. 04, 2017

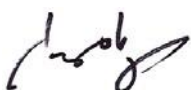
Test Requested:


As requested by the applicant, test(s) was/were performed as below:

Test Summary	Conclusion
1 European Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (XRF screening and chemical confirm)	PASS

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

Tested by: 
May li

Reviewed by: 
Boly Peng

Approved by: 
Jandyso

Declaration:

- (1) The report shall not be reproduced partly without the written approval of the laboratory, except in full produced.
- (2) All the results shown in the report apply to the tested sample, any erasion on the report is invalid
- (3) All tested sample will be kept for one month, if there is any doubt about the test result, please inform within this period

Shenzhen SEM.Test Technology Co., Ltd.

1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C. (518101)



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RoHS hazardous substances test

Test method:

IEC 62321-3-1:2013, XRF screening

IEC 62321-4-2013 for Hg, analyzed by ICP-OES

IEC 62321-5-2013 for Cd and Pb, analyzed by ICP-OES

IEC 62321:2008 Annex C and/or IEC 62321-7-1:2015 for Cr⁶⁺, analyzed by UV-VIS

IEC 62321-6-2015 for PBBs and PBDEs, analyzed by GC-MS

1. XRF results:

No.	Sample name	Part name	Sample Description	Results				
				Pb	Cd	Hg	Cr	Br
1	Spherical mini speaker	Shell	Black plastic	BL	BL	BL	BL	BL
2			Blue plastic	BL	BL	BL	BL	BL
3			Orange plastic	BL	BL	BL	BL	BL
4			Red plastic	BL	BL	BL	BL	BL
5			Yellow plastic	BL	BL	BL	BL	BL
6			Silvery coating	BL	BL	BL	BL	BL
7			White plastic	BL	BL	BL	BL	IN
8			Screw	Silvery metal	BL	BL	BL	BL
9	Plug	Black plastic	BL	BL	BL	BL	BL	
10-1		Silvery metal tip	BL [#]	BL	BL	BL	NA	
10-2		Silvery metal column	BL	BL	BL	BL	NA	
10-3		Solder	BL	BL	BL	BL	NA	
11-1		White plastic	BL	BL	BL	BL	BL	
11-2		Black plastic	BL	BL	BL	BL	BL	
12-1	Wire cover	White plastic	BL	BL	BL	BL	BL	
12-2		Black plastic	BL	BL	BL	BL	BL	
13	Wire	Wire	BL	BL	BL	BL	BL	
14	Speaker	Silvery metal	BL	BL	BL	BL	NA	
15		Magnet	BL	BL	BL	BL	NA	
16-1		Black plastic	BL	BL	BL	BL	BL	
16-2		Plastic film	BL	BL	BL	BL	BL	
17		Copper metal	BL	BL	BL	BL	NA	
18	Axle	Silvery metal	BL	BL	BL	BL	NA	
19-1	Solder	Solder	BL	BL	BL	BL	NA	
19-2		White material	BL	BL	BL	BL	BL	



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20			Silvery metal	BL	BL	BL	BL	NA
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2. Chemical confirm results:

Test Item(s)	Result (mg/kg)					Limit (mg/kg)
	7	--	--	--	--	
Mono-PBB	ND	ND	ND	ND	ND	--
Di-PBB	ND	ND	ND	ND	ND	--
Tri-PBB	ND	ND	ND	ND	ND	--
Tetra-PBB	ND	ND	ND	ND	ND	--
Penta-PBB	ND	ND	ND	ND	ND	--
Hexa-PBB	ND	ND	ND	ND	ND	--
Hepta-PBB	ND	ND	ND	ND	ND	--
Octa-PBB	ND	ND	ND	ND	ND	--
Nona-PBB	ND	ND	ND	ND	ND	--
Deca-PBB	ND	ND	ND	ND	ND	--
Sum of PBBs	ND	ND	ND	ND	ND	1000
Mono-PBDE	ND	ND	ND	ND	ND	--
Di- PBDE	ND	ND	ND	ND	ND	--
Tri- PBDE	ND	ND	ND	ND	ND	--
Tetra- PBDE	ND	ND	ND	ND	ND	--
Penta- PBDE	ND	ND	ND	ND	ND	--
Hexa- PBDE	ND	ND	ND	ND	ND	--
Hepta- PBDE	ND	ND	ND	ND	ND	--
Octa- PBDE	ND	ND	ND	ND	ND	--
Nona- PBDE	ND	ND	ND	ND	ND	--
Deca- PBDE	ND	ND	ND	ND	ND	--
Sum of PBDEs	ND	ND	ND	ND	ND	1000
Comment	PASS	PASS	PASS	PASS	PASS	--

Remark:

1. BL = below limit
2. OL = over limit
3. IN = inconclusive, chemical confirm test is recommended
4. NA = not applicable
5. mg/kg = milligram per kilogram = ppm
6. Method Detection Limit (MDL) :10mg/kg for Pb, Cd, Hg and Cr⁶⁺; 10mg/kg for PBB and PBDE
7. ND = not detected

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8. Negative = The Cr^{6+} concentration is below the limit of quantification. The coating is considered a non- Cr^{6+} based coating.
9. Positive = The Cr^{6+} concentration is above the limit of quantification and the statistical margin of error, The sample coating is considered to contain Cr^{6+} .

Note:

1. When perform screening tests, it is the result on total Br while test item on restricted substances is PBBs/PBDEs, it is the result on total Cr while test item on restricted substances is Cr^{6+} .
2. Results are obtained by EDXRF for primary screening, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-VIS (for Cr^{6+}) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration falls into the inconclusive area according to IEC 62321-3-1:2013 (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	$\text{BL} \leq (70-3\sigma) < X < (130+3\sigma) \leq \text{OL}$	$\text{BL} \leq (70-3\sigma) < X < (130+3\sigma) \leq \text{OL}$	$\text{LOD} < X < (150+3\sigma) \leq \text{OL}$
Pb	$\text{BL} \leq (700-3\sigma) < X < (1300+3\sigma) \leq \text{OL}$	$\text{BL} \leq (700-3\sigma) < X < (1300+3\sigma) \leq \text{OL}$	$\text{BL} \leq (500-3\sigma) < X < (1500+3\sigma) \leq \text{OL}$
Hg	$\text{BL} \leq (700-3\sigma) < X < (1300+3\sigma) \leq \text{OL}$	$\text{BL} \leq (700-3\sigma) < X < (1300+3\sigma) \leq \text{OL}$	$\text{BL} \leq (500-3\sigma) < X < (1500+3\sigma) \leq \text{OL}$
Br	$\text{BL} \leq (300-3\sigma) < X$	---	$\text{BL} \leq (250-3\sigma) < X$
Cr	$\text{BL} \leq (700-3\sigma) < X$	$\text{BL} \leq (700-3\sigma) < X$	$\text{BL} \leq (500-3\sigma) < X$

3. The XRF screening test for RoHS elements. The reading may be different to the actual content in the sample be of non-uniformity composition.
4. # the lead content of tested component exceeded 1000ppm, but less than 40000ppm, it can comply with the RoHS directive, as it is exempted to contain lead with up to 40000ppm according to item 6(c) of annex III of 2011/65/EU, as per applicant's declaration.



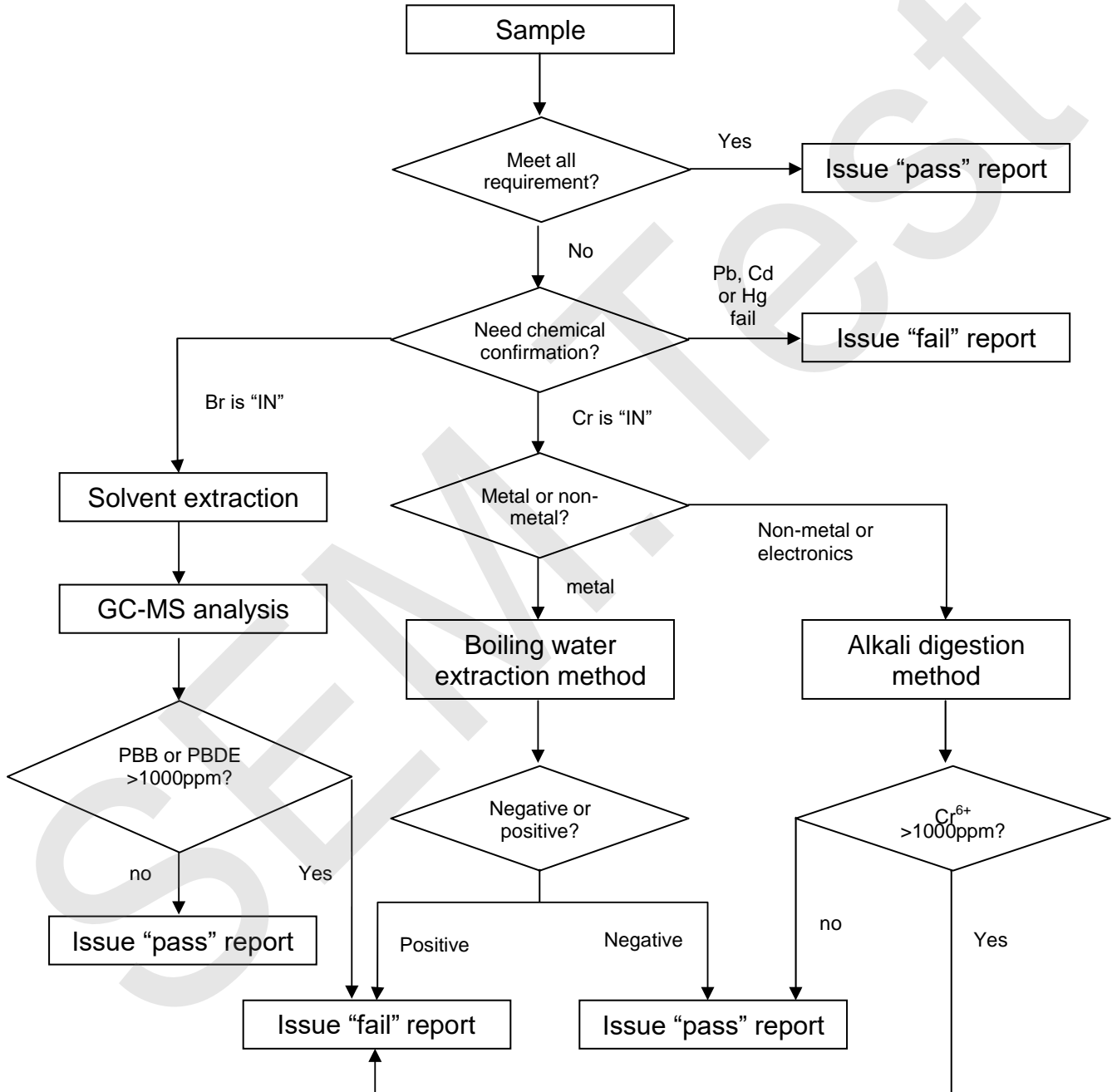
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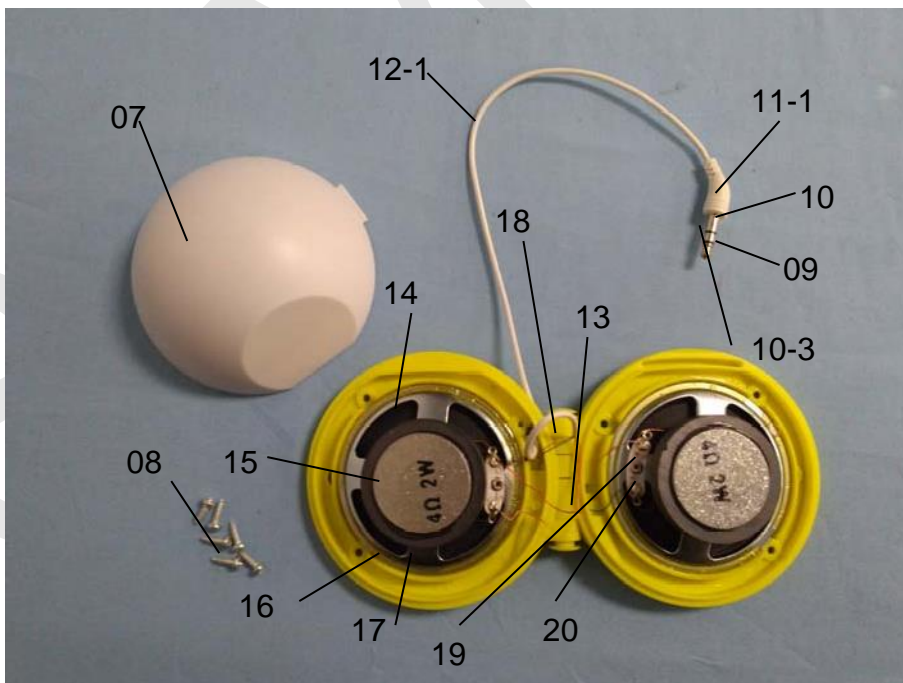
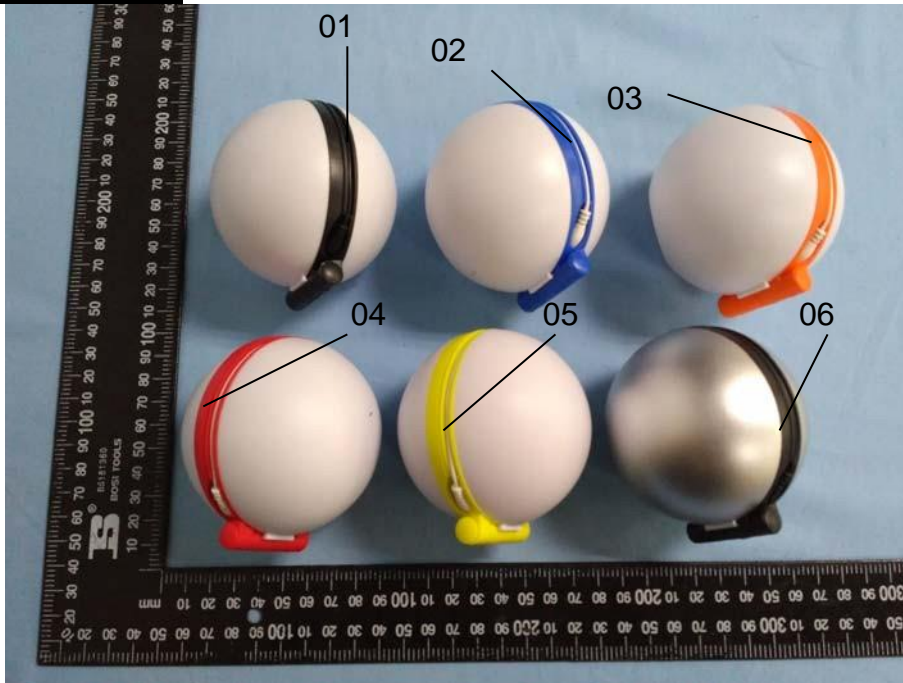
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Test flow:



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Tested sample photo:



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