



**CENTRE OF TESTING SERVICE
INTERNATIONAL**

OPERATE ACCORDING TO ISO/IEC 17025

TEST REPORT

Test Report Number : CTS190220023-C-D-R1

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**TEST REPORT**

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1 General Information**1.1 Application Details**

Name : Mid Ocean Brands B.V.
Address : 7/F., Kings Tower, 111 King Lam Street , Cheung Sha Wan,
Kowloon Hong Kong.
Contact : Derek Hui
Telephone : +852 2998 2345
Fax : +852 2998 2305
Mobile telephone : /
Email : /

1.2 Manufacturer & Buyer

Manufacturer name : Mid Ocean Brands B.V.
Address : 7/F., Kings Tower, 111 King Lam Street , Cheung Sha Wan,
Kowloon Hong Kong.
Contact : Derek Hui
Telephone : +852 2998 2345
Fax : +852 2998 2305
Mobile telephone : /
Email : /
Buyer name : /

1.3 Description of the Test Item

Sample name : Water powered LCD desk clock
Model No. : IT3828
Brand name : /
Condition of sample(s) : EFFECTIVE



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2 Test Results

2.1 General Information

2.1.1 Sample Receiving Date

Feb. 20, 2019

2.1.2 Testing Period

Feb. 20, 2019 to Mar. 29, 2019

2.1.3 Test Requested

Please refer to next page(s).

2.1.4 Test Method

Please refer to next page(s).

2.1.5 Test Results

Please refer to next page(s).

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2.2 Results

2.2.1 Test results of all parts by EDXRF and chemical confirmation

Based on the performed tests on submitted samples, the results of Lead, Cadmium, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Test Method:

1. X-Ray Fluorescence Spectrometry method in reference to IEC 62321-3-1:2013.
2. Chemical test method

Test Item(s)	Sample preparation	Test Method	Test Instrument
Lead (Pb)	With reference to IEC 62321-2:2013	With reference to IEC 62321-5:2013	ICP-AES
Cadmium (Cd)		With reference to IEC 62321-5:2013	ICP-AES
Mercury (Hg)		With reference to IEC 62321-4:2013+A1:2017	ICP-AES
Chromium VI (Cr VI)		With reference to IEC 62321-7-1:2015 IEC 62321-7-2:2017	UV-Vis
PBBs		With reference to IEC 62321-6:2015	GC-MS
PBDEs			

No.	Sample Description	Results					Chemical Confirmation Result (Unit=mg/kg)
		Pb	Cd	Hg	Cr	Br	
1	Blue transparent plastic	P	P	P	P	P	/
2	Grey transparent plastic	P	P	P	P	P	/
3	Silver coating	P	P	P	P	P	/
4	Black plastic base	P	P	P	P	P	/
5	White plastic base	P	P	P	P	P	/
6	Grey rubber	P	P	P	P	P	/
7	Copper metal nut	X	P	P	P	/	Pb=2.5×10 ⁴ *
8	Silvery metal piece	P	P	P	P	/	/

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No.	Sample Description	Results					Chemical Confirmation Result (Unit=mg/kg)
		Pb	Cd	Hg	Cr	Br	
9	Green fibreboard	P	P	P	P	X	PBBs, PBDEs=N.D.
10	Brown fibreboard	P	P	P	P	P	/
11	Chip IC	P	P	P	P	X	PBBs, PBDEs=N.D.
12	PCB Solder tin	P	P	P	P	/	/
13	Chip resistor	P	P	P	P	P	/
14	Chip capacitor	P	P	P	P	P	/
15	Chip metal dome	P	P	P	X	/	CrVI=N.D.
16	Wire Red plastic cable	P	P	P	P	P	/
17	Black plastic cable	P	P	P	P	P	/
18	Silvery metal wire	P	P	P	P	/	/

Note : P = Below Limit (Pass)

F = Over Limit (Fail)

X = Inconclusive

N.D. = not detected (less than MDL)

* According to the declaration from client, the source of lead in the sample could be from the copper alloy material. Lead as a copper alloy containing which is under 4% (40000ppm) is exempted from the requirement of RoHS Directive (Annex III,2011/65/EU).

Remarks:

- (1) Results are obtained by EDXRF for primary screening, and further chemical testing is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013.

Element	Polymer Materials	Metallic Materials	Electronic Materials
Pb	$P \leq 500 < X < 1300 \leq F$	$P \leq 500 < X < 1300 \leq F$	$P \leq 500 < X < 1300 \leq F$
Cd	$P \leq 50 < X < 130 \leq F$	$P \leq 50 < X < 130 \leq F$	$X < 130 \leq F$
Hg	$P \leq 500 < X < 1300 \leq F$	$P \leq 500 < X < 1300 \leq F$	$P \leq 500 < X < 1300 \leq F$

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Cr	P ≤ 700 < X	P ≤ 700 < X	P ≤ 500 < X
Br	P ≤ 250 < X	/	P ≤ 250 < X

(2) Chemical Confirmation Result acceptable Limit and Method Detect Limit:

Test items	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (CrVI) by alkaline extraction	Chromium VI (CrVI) by boiling water extraction#	PBBs	PBDEs
Unit	mg/kg	mg/kg	mg/kg	mg/kg	μg/cm ²	mg/kg	mg/kg
Method Detection Limit	2	2	2	2	0.10	5	5
Acceptable Limit	1000	100	1000	1000	---	1000	1000

Note : 1. #=a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 μg/cm². The sample coating is considered to contain CrVI.
 b. The sample is negative for CrVI if CrVI is N.D. (concentration less than 0.10 μg/cm²). The coating is considered a non-CrVI based coating.
 c. The result between 0.10 μg/cm² and 0.13 μg/cm² is considered to be inconclusive unavoidable coating variations may influence the determination.
 2. Cr(VI) results represent status of the sample at the time of testing.

(3) The tested part of the sample was specified by client.

2.2.2 Phthalates

Based on the performed tests on submitted samples, the results of phthalates comply with the limits as set by RoHS Directive 2011/65/EU Annex II and its amendment 2015/863/EU.

Test Method: Determination of phthalates by GC-MS based on IEC62321-8:2017.

Sample Description	No.1	Blue transparent plastic				
	No.2	Grey transparent plastic				
	No.3	Silver coating				
Substance Name	Limit	Unit	MDL	Result		
				No.1	No.2	No.3
Dibutyl phthalate (DBP)	0.1	%	0.005	N.D.	N.D.	N.D.
Benzyl butyl phthalate (BBP)	0.1	%	0.005	N.D.	N.D.	N.D.
Bis (2-ethyl(hexyl)phthalate) (DEHP)	0.1	%	0.005	N.D.	0.032	N.D.
Diisobutyl phthalate (DIBP)	0.1	%	0.005	N.D.	N.D.	N.D.

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Sample Description	No.4		Black plastic base			
	No.5		White plastic base			
	No.6		Grey rubber			
Substance Name	Limit	Unit	MDL	Result		
				No.4	No.5	No.6
Dibutyl phthalate (DBP)	0.1	%	0.005	N.D.	N.D.	N.D.
Benzyl butyl phthalate (BBP)	0.1	%	0.005	N.D.	N.D.	N.D.
Bis (2-ethyl(hexyl)phthalate) (DEHP)	0.1	%	0.005	N.D.	N.D.	0.046
Diisobutyl phthalate (DIBP)	0.1	%	0.005	N.D.	N.D.	N.D.

Sample Description	No.9		Green fibreboard			
	No.10		Brown fibreboard			
	Substance Name	Limit	Unit	MDL	Result	
No.9					No.10	
Dibutyl phthalate (DBP)	0.1	%	0.005	N.D.	N.D.	
Benzyl butyl phthalate (BBP)	0.1	%	0.005	N.D.	N.D.	
Bis (2-ethyl(hexyl)phthalate) (DEHP)	0.1	%	0.005	N.D.	N.D.	
Diisobutyl phthalate (DIBP)	0.1	%	0.005	N.D.	N.D.	

Sample Description	No.16		Red plastic cable			
	No.17		Black plastic cable			
	Substance Name	Limit	Unit	MDL	Result	
No.16					No.17	
Dibutyl phthalate (DBP)	0.1	%	0.005	N.D.	N.D.	
Benzyl butyl phthalate (BBP)	0.1	%	0.005	N.D.	N.D.	
Bis (2-ethyl(hexyl)phthalate) (DEHP)	0.1	%	0.005	N.D.	N.D.	
Diisobutyl phthalate (DIBP)	0.1	%	0.005	N.D.	N.D.	

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Note : 1. N.D. = not detected (less than MDL)
2. MDL= Method Detect Limit
3. The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II and its amendment 2015/863/EU.

Remark: According to the declaration from client, the report is quoted from the report CTS19022002 2-C. In the event of any discrepancy, the report CTS190220022-C shall prevail.

Written by: *Amanda* Inspected by: *Annie* Approved by: *Nicky*

End of Report

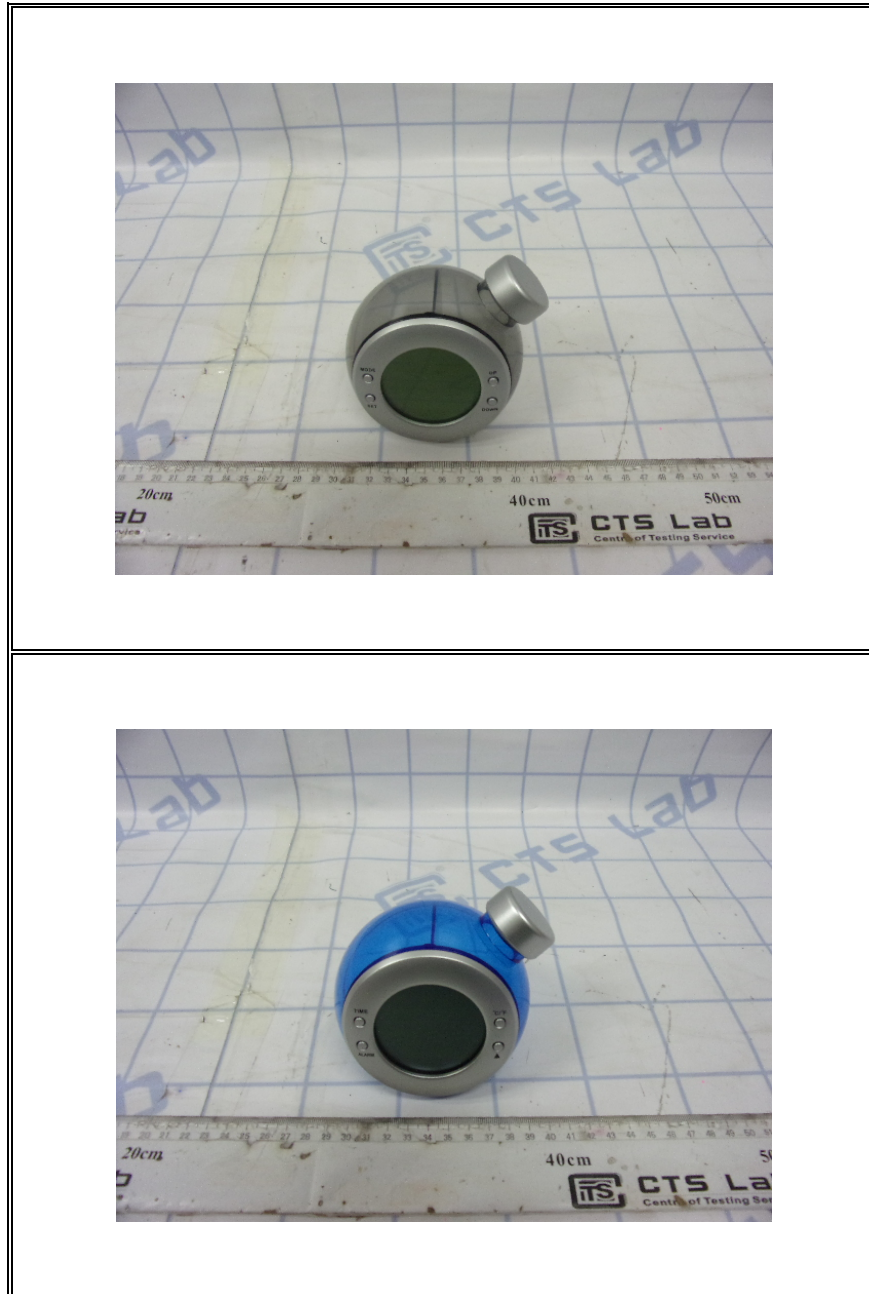


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3 Sample Reference Photo



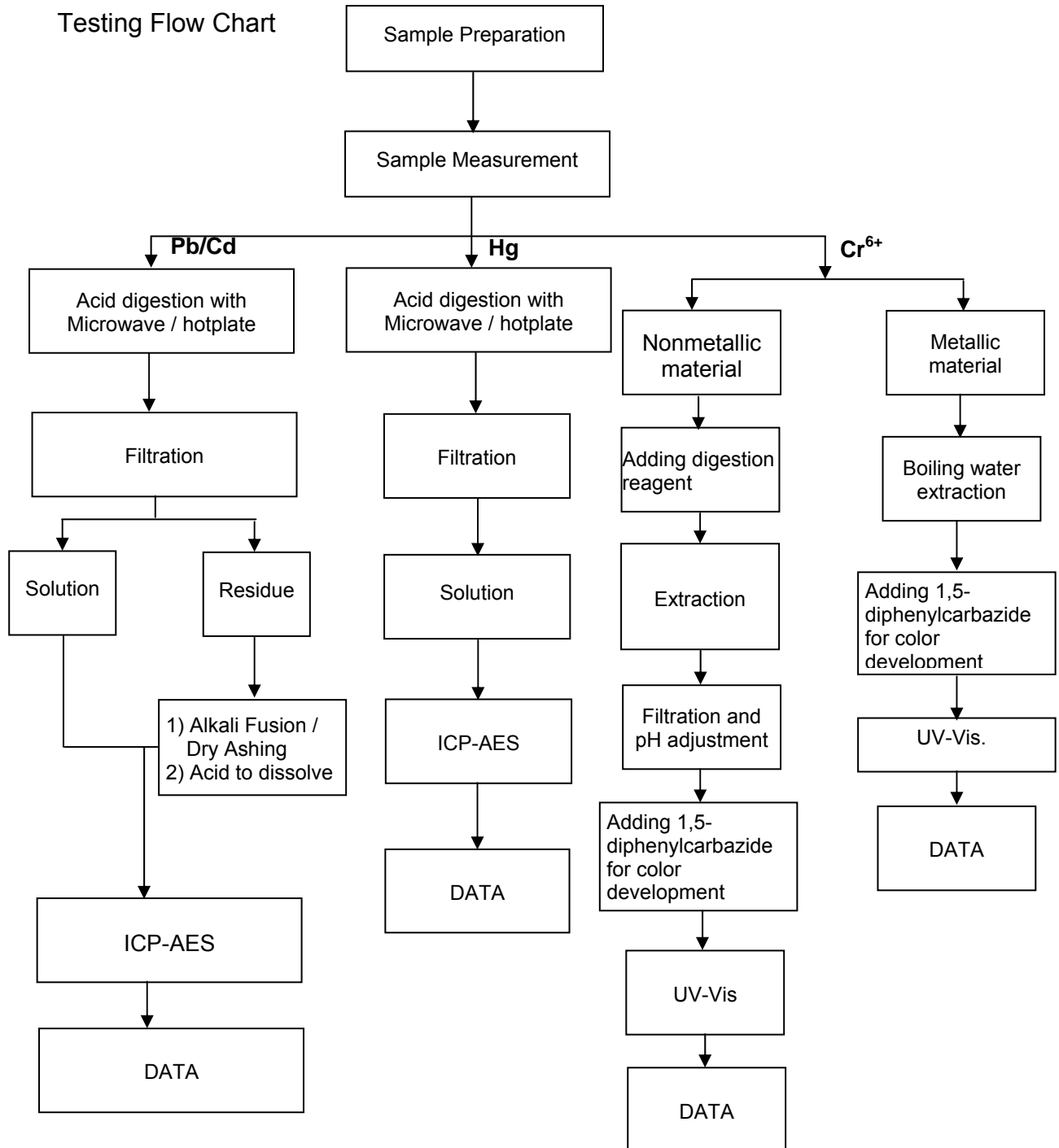
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4 Attachment

Testing Flow Chart



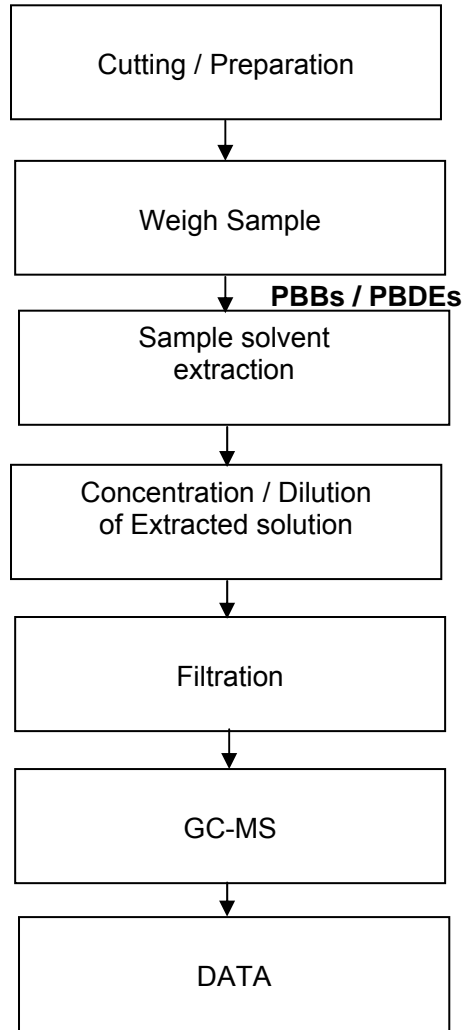
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Testing Flow Chart



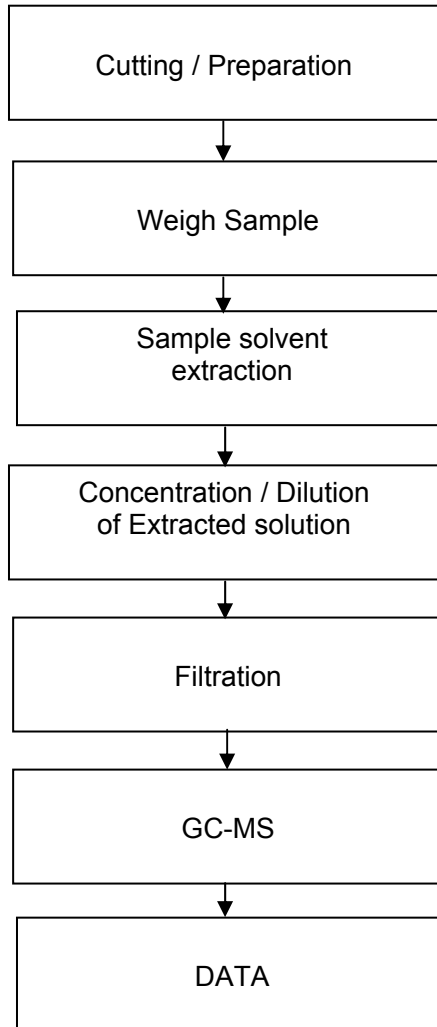
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Phthalates Testing Flow Chart



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