



中国认可
国际互认
检测
TESTING
CNAS L6478



TEST REPORT

Report No...... : WTF22F11232117A1C
Applicant..... : Mid Ocean Brands B.V.
Address..... : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Manufacturer..... : 103941
Sample Name..... : Round shape wall clock
Sample Model..... : KC2669
Date of Receipt sample..... : 2022-11-18 & 2022-12-01
Testing period..... : 2022-11-18 to 2022-11-25 & 2022-12-01 to 2022-12-02
Date of Issue..... : 2022-12-02
Test Result..... : Refer to next page (s)

Prepared By:

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Signed for and on behalf of
Waltek Testing Group (Foshan) Co., Ltd.

Swing.Liang



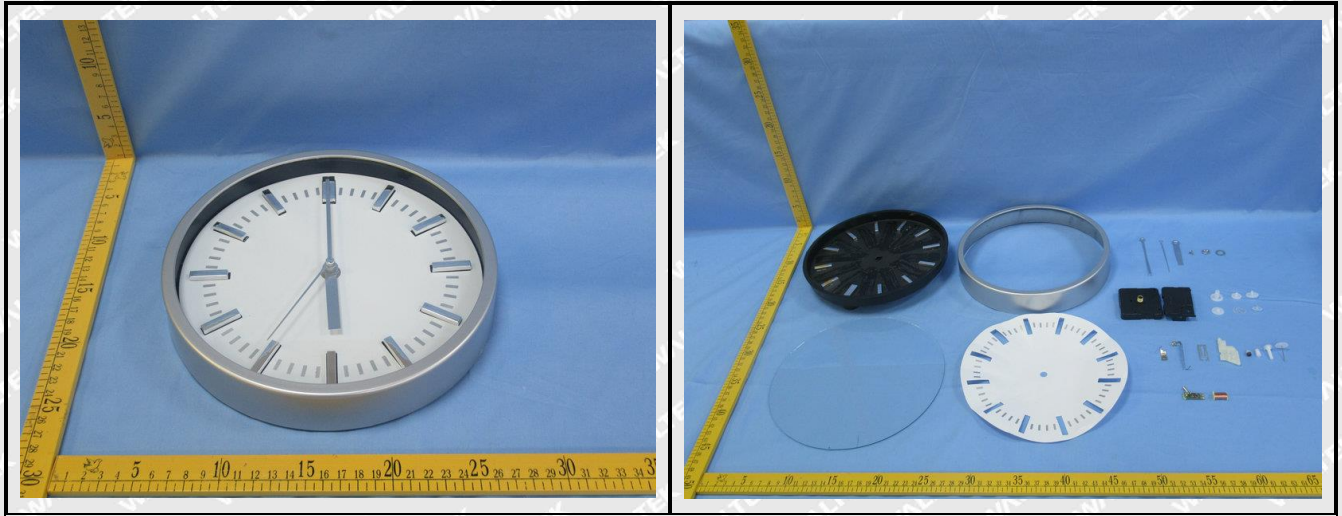
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- Test Requested** : In accordance with the RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863.
- Test Method**..... : 1) With reference to IEC 62321-2:2021, disassembly, disjunction and mechanical sample preparation
2) With reference to IEC 62321-3-1:2013, screening - Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry
3) With reference to IEC 62321-4:2013+AMD1:2017 CSV, determination of Mercury by ICP-OES
4) With reference to IEC 62321-5:2013, determination of Lead and Cadmium by ICP-OES
5) With reference to IEC 62321-7-2: 2017 and IEC 62321-7-1: 2015, determination of Hexavalent Chromium by UV-Vis
6) With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS
7) With reference to IEC 62321-8:2017, determination of Phthalates content by GC-MS.
- Test Conclusion** : **Pass** (Based on the performed tests on the submitted samples, the results comply with the RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863)

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Sample Photo(s):



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**Test Results:****1. Lead, Mercury, Cadmium, Hexavalent Chromium, PBBs and PBDEs**

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
1	Silvery-yellow coating	BL	BL	BL	BL	BL	NA
2	Black plastic holder without silvery-yellow coating	BL	BL	BL	BL	BL	NA
3	Black plastic base	BL	BL	BL	BL	BL	NA
4	Black plastic shell with silvery plating	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
5	Transparent double faced adhesive tape	BL	BL	BL	BL	BL	NA
6	White plastic sheet with silvery printing	BL	BL	BL	BL	BL	NA
7	Transparent glass sheet	BL	BL	BL	BL	--	NA
8	Silvery metal sheet	BL	BL	BL	BL	--	NA
9	Silvery metal rivet	BL	BL	BL	BL	--	NA
10	Silvery metal gasket	BL	BL	BL	BL	--	NA
11	Silvery metal screw	BL	BL	BL	BL	--	NA
12	Black plastic shell	BL	BL	BL	BL	IN	PBBs : ND PBDEs : 89
13	Golden metal sleeve	BL	BL	BL	BL	--	NA
14	White plastic gear	BL	BL	BL	BL	BL	NA
15	Transparent plastic gear	BL	BL	BL	BL	BL	NA
16	Semi-transparent plastic gear	BL	BL	BL	BL	BL	NA
17	Silvery metal axle	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
18	Dark grey magnetic ring	BL	BL	BL	IN	--	Cr ⁶⁺ : ND
19	Silvery metal pin	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative



Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
20	Silvery metal sheet	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
21	Silvery-grey metal sheet	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
22	Off-white plastic sheet	BL	BL	BL	BL	BL	NA
23	Yellow plastic skeleton	BL	BL	BL	BL	BL	NA
24	Coppery varnished wire	BL	BL	BL	BL	BL	NA
25	Silvery EC	BL	BL	BL	BL	BL	NA
26	Silvery metal pin	BL	BL	BL	BL	--	NA
27	Green PCB	BL	BL	BL	BL	BL	NA
28	Solder	BL	BL	BL	BL	--	NA
29	Red IC	BL	BL	BL	BL	BL	NA

Remark:

- (1) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for Cr⁶⁺) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1: 2013 (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	BL ≤ (70-3σ) < IN < (130+3σ) ≤ OL	BL ≤ (70-3σ) < IN < (130+3σ) ≤ OL	LOD < IN < (150+3σ) ≤ OL
Pb	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Hg	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Cr	BL ≤ (700-3σ) < IN	BL ≤ (700-3σ) < IN	BL ≤ (500-3σ) < IN
Br	BL ≤ (300-3σ) < IN	--	BL ≤ (250-3σ) < IN

BL= Below Limit OL= Over Limit LOD = Limit of Detection -- = Not Regulated

- (2) "IN" expresses the inconclusive region, and further chemical testing to confirm whether it complies with the requirement of RoHS Directive.
 (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) mg / kg =milligram per kilogram=ppm, μg/cm² = Micrograms per square centimetre.
 (5) ND = Not Detected or lower than limit of quantitation.



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- (6) NA = Not Applicable, as the XRF screening test result was below the limit or as the XRF screening directly determine that test result was over the limit, it was not need to conduct the wet chemical testing.
 (7) LOQ = Limit of quantitation.

Test Items	Pb	Cd	Hg	Cr ⁶⁺		PBB	PBDE
Units	mg/kg	mg/kg	mg/kg	mg/kg	µg/cm ²	mg/kg	mg/kg
LOQ	2	2	2	8	0.1	5	5

The LOQ for single compound of PBBs and PBDEs is 5mg/kg, LOQ of Cr⁶⁺ for polymer and composite sample is 8mg/kg and LOQ of Cr⁶⁺ for metal sample is 0.1µg/cm².

- (8) RoHS Requirement

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

- (9) According to IEC 62321-7-1:2015, determined of Cr⁶⁺ on metal sample by boiling water extraction test method, and result is shown as Positive/Negative.

Boiling water extraction:

Negative = Absence of Cr⁶⁺ coating, the detected concentration in boiling water extraction solution is less than 0.10ug/cm².

Positive = Presence of Cr⁶⁺ coating, the detected concentration in boiling water extraction solution is greater than 0.13ug/cm².

Information on storage conditions and production date of the tested sample is unavailable and thus Cr⁶⁺ results represent status of the sample at the time of testing.

- (10) Abbreviation:

“Pb” denotes Lead, “Cd” denotes Cadmium, “Hg” denotes Mercury, “Cr” denotes Chromium, “Cr (VI)” denotes Hexavalent Chromium, “Br” denotes Bromine, “PBBs” denotes Total Polybrominated Biphenyls, “PBDEs” denotes Total Polybrominated Diphenyl Ethers.

2. Phthalates:

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T01	1	ND	ND	ND	ND
T02	2+3+4+6+12 [△]	ND	ND	ND	ND
T03	5	ND	ND	ND	ND
T04	7	--	--	--	--
T05	8	--	--	--	--
T06	9	--	--	--	--
T07	10	--	--	--	--
T08	11	--	--	--	--
T09	13	--	--	--	--
T10	14+15+16+22+23 [△]	ND	ND	ND	ND



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Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T11	17	--	--	--	--
T12	18	--	--	--	--
T13	19	--	--	--	--
T14	20	--	--	--	--
T15	21	--	--	--	--
T16	24+25+27+29 [△]	ND	ND	ND	ND
T17	26	--	--	--	--
T18	28	--	--	--	--

Note:

- (1) mg/kg = milligram per kilogram= ppm
- (2) ND = Not Detected or lower than limit of quantitation.
- (3) -- = Not Regulated.
- (4) LOQ = Limit of quantitation.

Test Items	DBP	BBP	DEHP	DIBP
Units	mg/kg	mg/kg	mg/kg	mg/kg
LOQ	50	50	50	50

- (5) Abbreviation:
 "DBP" denotes Dibutyl phthalate, "BBP" denotes Benzyl butyl phthalate (BBP), "DEHP" denotes Bis(2-ethylhexyl)-phthalate, "DIBP" denotes Diisobutyl phthalate, "PHT" denotes Phthalates.

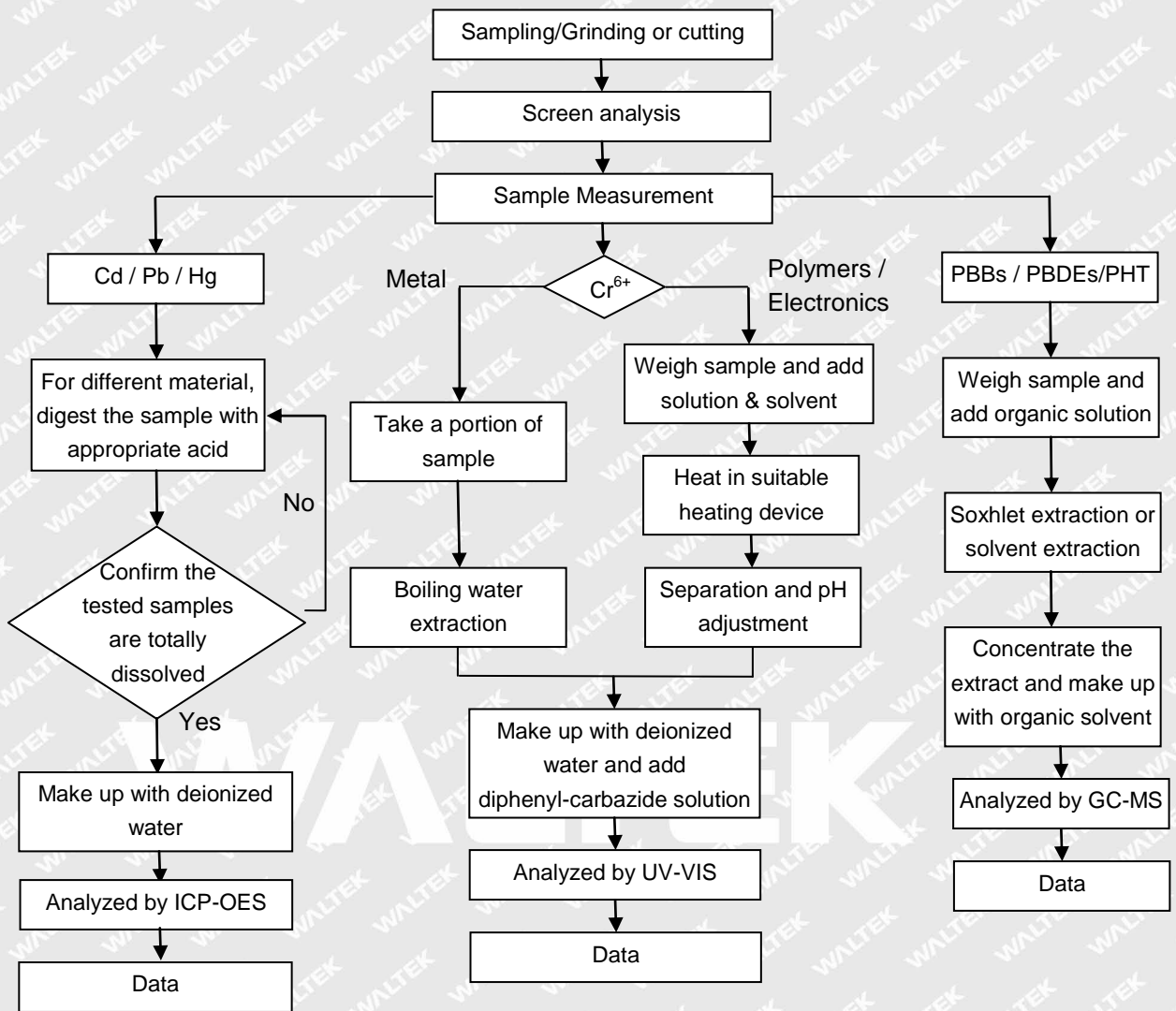
- (6) RoHS requirement

Restricted Substances	Limits
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Di(2-ethylhexyl) phthalate (DEHP)	0.1% (1000 mg/kg)
Di-iso-butyl phthalate (DIBP)	0.1% (1000 mg/kg)

- (7) "△"= As client's requirement, the testing was conducted based on mixed components. Results are calculated by the minimum weight of mixed components.



Measurement Flowchart:

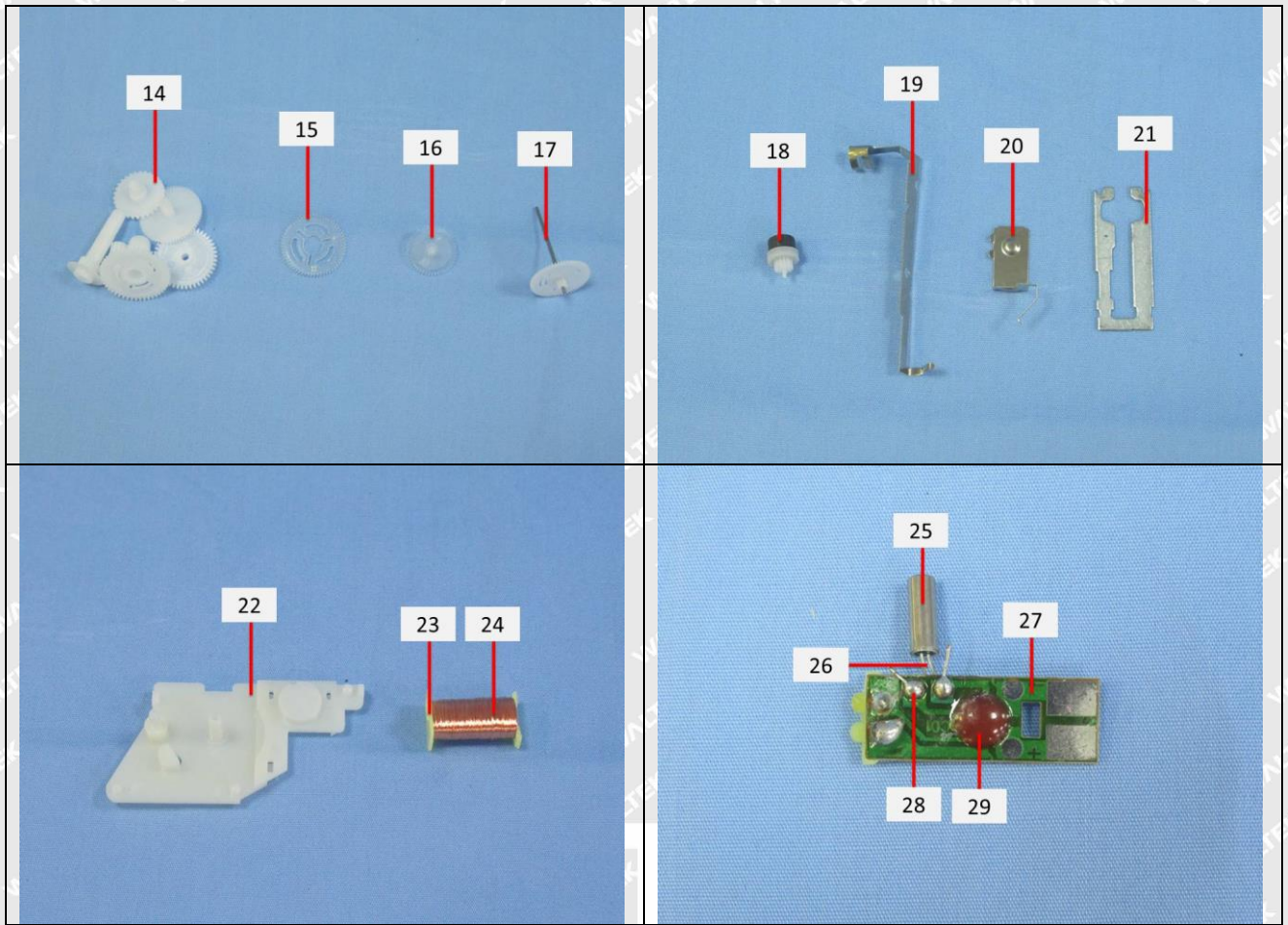




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Photograph(s) of parts tested:





Remarks:

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===== End of Report =====