

中国认可 国际互认 检测 TESTING CNAS L6478

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TEST REPORT

Reference No
Applicant
Address
Manufacturer
Sample Name
Model No
Test Requested
Test Method

WTF18F0611406	1C
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Mid Ocean Brands B.V.

Unit 201, 2/F, Laford Centre, 838 Lai Chi Kok Road, Cheung Sha Wan, Kowloon, Hong Kong.

114628 Wall clock

MO7503

In accordance with the RoHS Directive 2011/65/EU

1) With reference to IEC 62321-2:2013, disassembly, disjointment 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, 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

Test Conclusion:Based on the performed tests on the submitted samples, the results
comply with the RoHS Directive 2011/65/EUDate of Receipt sample:2018-06-06Date of Test:2018-06-06 to 2018-06-15Date of Issue:2018-07-03

Test Result : Please refer to next page (s)

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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Page 1 of 12

Reference No.: WTF18F06114061C



Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
	tet the state state	Cd	BL W	i i i it	.it
	NUT MUT MUT MU D	Pb	BL	et allet aller white	white wi
1	Black plastic frame	Hg	BL	NA	Comply
<u>ن</u> ر ا	LIFE WALTE WALT WALT WAT	Cr	BL	at the tet	NITER MIT
-24	i i it it it	Br	BL	WILL WAL WAL V	1. m.
	the state white white	Cd Cd	BL	a at the	
MUL	when the second	Pb	BL	NIE WITT WAT WAT	- m
2	Transparent glass plate	Hg	JU BL V	NA	Comply
NUT	when white when you	Cr	BL	re- street intre- intre	MAL
	a at let let	Br	M BLM	me in in	.L
KE.	all water water water wa	Cd	, BL ,	t set set set	NITE
		Pb	BL	JULY MULT MULT	Comply
3	Silvery metal sheet	Hg	BL	NA A	
-m	with the state	Cr	BL	inter white white we	in me
	t let ster is outer	J Br v	BL		
4 at	Black plastic base	Cd	BL	I A ALTER MITE MAL	wat
		Pb	BL	The Dr. A.	
		Hg	BL	NA S	Comply
	su st at	Cr	BL	white white white	20. 11
EX-	et alter alter and	Br	BL	t at at	
11	241. 20. 2	Cd	BL	NITE WALL WALL	le du
	et tet itet ite	Pb	BL	Stat At	1 1
5	Transparent glue	Hg	E BL	NA NA	Comply
	at at let set	Cr v	BL	1 211 211 2	e A
JUE	and and a superior	Br	BL		A NUTH
		Cd	BL	a with with	20.
.et		Pb	BL	- A At At	JEN .
6	Silvery metal screw	Hg	BL	NA NA	Comply
+	ret ret the with a set	Cr	BL	- i st st	the start
ND.L.	it was war we	Br	BL H	JEt JIE NITE	it's white
7	a stat set set	Cd	BL	211. 211 24	1
	White plastic rivet with golden	Pb	BL	et the states of	Er NLTV
	coating	Hg	BL	NA SU	Comply
		Cr	BL	the state of	TER
	Mr. M. S.	Br 🔶	BL	it white white white	sur s
A	ret ret uter with with	Cd	BL	1 it it	WALTER WA
	Silvery metal sheet with red	Pb	BL 🖉	- LIER MITE MITE	
8	coating	Hg	BL	NA	Comply
	-	Cr	BL	THE STAR STAR	ITE INLIE
-m		Br	BL	in the she	24



Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
At	THE LIFE ALTER MUTER A	Cd	M BL	s at the	at let
N ^{LI}		Pb	BL	et aller alle white	
9	Silvery metal sheet with black coating	Hg	BL	NA	Comply
		Cr	BL	set set ster	
24	i s at at at	Br	BL	WILL MAL WILL D	
	at white white white white	Cd	BL	at at at	et Je
m	un m t	Pb	BL		211-
10	Black plastic sheet	Hg	Sh BL	PBBs : ND PBDEs : 498	Comply
Inti'	Main whe will we	Cr	BL	PDDES . 490	with m
	at at set set	Br	n INn	Mr. W. V.	.t.
1 ^E	net when when when we	Cd	, BL ,	t set set ster ster	NITE MI
	the state	Pb	BL		20. 10.
11	Black plastic shell	Hg	BL	PBBs : ND	Comply
nn	with the state	Cr	BL		
	t set set is alle	Br wh	IN		
JUL .	when all all an	Cd	BL	THE STREE WITE SML	Comply
	at at a set	Pb	BL	PBBs : ND PBDEs : 289	
12	Black plastic cover	Hg	BL		
		Cr	BL		
et		Br	IN	L A At	
1	Silvery metal sheet	Cd	BL	NUT INT WALL	Comply
		Pb	BL		
13		Hg	BL	Cr ⁶⁺ : Negative	
		Cr	NIN 3	U. M. M. M.	
J.		Br	BL		A NITER
h.		Cd	BL N	in the me	Comply
1 et	10- 10- 10- 10- 10- 10- 10- 10- 10- 10-	Pb	BL		
14	Dark grey magnetic ring	Hg	BL	NA	
با		Cr 🔹	BL	an in t	1 1
Et Indie	The wait wat wat w	Br	, ⊢ BL,	THE JEEK NUTER I	NITE NALLY
	, it is at at	Cd	BL	Mr. M. W. L.	
5	A NUTER INTE MAIN MAL	Pb	BL	at at at a	Comply
15	Silvery meta axle	. A Hg	BL	Cr ⁶⁺ : Negative	
INLIEK V	THE THE THE NUTER	Cr	IN		- 14
	me me m	⇒⊢ Br ∠	BL	IE NITE INTE MUT	with w
TEK N	NITER WAITER WAITER WAITER W	Cd	BL	20 20 20	A
		Pb	, BL ,	- TEK JEK JEE	INLITER NO
16	White plastic gear	Hg	BL	NA	Comply
F .	et oure oure would won	Cr	BL	at at at	JEK JE
- m	The In A	Br	BL	Martin Martin Martin MA	m



Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
.dt	Let the state with a	Cd	n BL	i i it it	lit .
	Were aller aller and a	Pb	BL	et alter alter white	white wh
17	White plastic sleeve	Hg	BL	NA	Comply
	tite watte wate water with	Cr	BL	THE THE STREET	NUTE MALT
		Br	BL	Weth white with the	
	at white white white white	Cd	BL	at at at	et tier
	Ju In the	Pb	BL	all water water water	241-
18	Semi-transparent plastic gear	Hg	SL S	NA	Comply
	mer me me m	Cr 🔶	BL	re alter alter white	with w
	at at alt set is	Br	M BLM	Mr. W. V.	
1 ^e	mit whit whe whe w	Cd	, BL /	t set set ster	INLIE IN
		Pb	BL	With Mus Mit	20. 21.
19	Off-white plastic gear	Hg	BL	NA A	Comply
	with the state	Cr	BL	antite white white w	
	t get get is alle	Br 🗤	BL		at let
Inth	white white white our	Cd	BL	JER STER WITE SAL	WAL
	at at a ste	Pb	BL	Cr ⁶⁺ : Negative	Comply
20	Silvery metal sheet	Hg	BL		
	an a start	Cr	N IN	white white white	24 24
	TEX STER STER	Br	BL	L A At	14 5
2	Silvery metal sheet	Cd	BL	NUT INT WALL	Comply
		Pb	BL		
21		Hg	BL	Cr ⁶⁺ : Negative	
		Cr N	N	U. M. M. M.	
	and and and a set of	Br	BL		* NITER
21.		Cd	BL	in the shirt	11 1
		Pb	BL		Alt .
22	Coppery metal winding of inductor	Hg	BL	NA	Comply
	at all set off of	Cr s	BL	an m	at a
10	the while while when the	Br	, ⊢ BL,	THE STAR STRAN	LITE MALL
	i s at at at	Cd	BL	Mr. M. W. L.	L
	A MITER MITER MAIL MAL	Pb	BL	the state of	et tier
23	White plastic bobbin of inductor	. KHg 📈	BL	NA	Comply
		Cr	BL		- Let
	me me m	st Br	BL	IE INTER INTE MUT	wrt w
	NUTER ANITER ANTIER ANALIER AN	Cd	BL	20. 20.	*
		Pb	, BL	t fet tiet tiet	Comply
24	Silvery metal pin of crystal	Hg	BL	Cr ⁶⁺ : Negative	
	oscillator	Cr	IN	at at at	
	10 Ju 1	Br	BL	mar inter white wh	-2M

Reference No.: WTF18F06114061C



Part No.	Part Description	Part Description Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
	at the state with a state of the	Cd	BL	t t A	it.
NITE .	unit whit when we we	Pb	BL 🗸	et stet atter white	white wh
25	Silvery body of crystal oscillator	Hg	BL	NA	Comply
EF-	etter unite white white white	Cr	BL	alt alt alt	NUTE MUTE
24	i i stat d	Br	BL	with white when a	1
- S	et alle all water water	Cd Cd	BL	at at at a	(It JE
MUL	with the second second	Pb 🔨	BL	ntite white white white	Mar
26	Brown-green PCB	Hg	Ju BL	NA	Comply
INLI	mer me me m	Cr 🔶	BL	It aller alle and	
	at at all set of	Br	M BLM	- Mr - W - V-	
16	nette unter when when you	Cd	, BL ,	t set set ster ster	Comply
		Pb	IN	Pb :221	
27	Solder	Hg	BL		
m m	with the state	Cr	BL		
	t ret ster of mare	Br St	BL		at at
MALI	wat was sur	Cd	BL	Tet NUTER INTERNAL	water
	at all a ste	Pb	BL	en la la la la	×
28	Silvery metal wire	Hg	BL	NA NA	Comply
	the state of the	Cr	BL	water war with	24. 1.
et	TER ALTER ALTE ANAL	Br	BL	at at at	THE UT
JU.	e un un e	Cd	BL	NITE WALT WALL	in an
- 14	et tet tet ster	Pb	BL	A	let let
29	Chip IC	Hg	E BL	NA NA	Comply
JE	at at set set	Cr Cr	BL 3	the star star and	
		Br	BL		NITE .
30	Grey glue	Cd	BL of	i and an	20. 1
		Pb	BL		Comply
		Hg	BL	NA	
*	ret ret tret with any	Cr	BL		At A
11.	a what when when a	Br	⇒ BL⊘+	THE STREE MUTER	Str. Wat



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	$LOD < IN < (150+3\sigma) \le OL$		
Pb	$BL \le (700-3\sigma) < IN < (1300+3\sigma) \le OL$	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< td=""><td>$BL \leq (500\text{-}3\sigma) < IN$</td></in<>	$BL \leq (500\text{-}3\sigma) < IN$		
Br	BL ≤ (300-3σ) < IN	et white white white w	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) ppm = mg / kg, based on the dry weight of tested sample.
- (5) ND = Not Detected, less than the value of Method Detection Limit.
- (6) NA = Not Applicable, as the XRF screening test result was below the limit, it was not need to conduct the wet chemical testing.

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
MDL	<u>ک</u> 2	2	2	2	0.1	5	<u> </u>

(7) MDL= Method Detection Limit in wet chemical test.

The MDL for single compound of PBBs and PBDEs is 5mg/kg, MDL of Cr^{6+} for polymer and composite sample is 2mg/kg and MDL of Cr^{6+} for metal sample is $0.1\mu g/cm^2$.

(8) 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 Cr^{6+} coating, the detected concentration in boiling water extraction solution is less than 0.10 ug/cm².

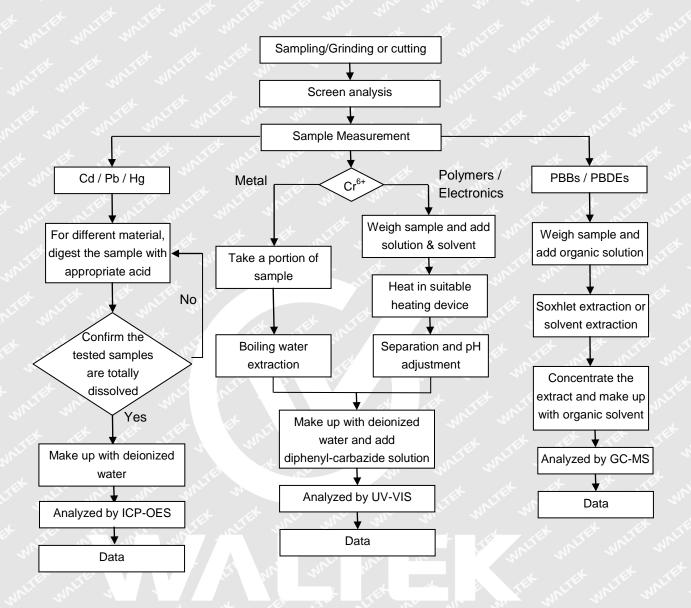
Positive = Presence of Cr^{6+} coating, the detected concentration in boiling water extraction solution is greater than 0.13ug/cm².

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.

- (9) The testing standard "IEC 62321-7-2:2017" does not been accredited by CNAS.
- (10)As per client's requirement, the results of specimen from No.10 to No.29 are extracted from report No.WTF18F05112411A1C and No.30 is extracted from report No.WTF18F05112411A1R1C



Measurement Flowchart:



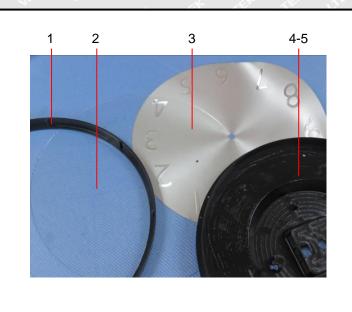
\bigotimes

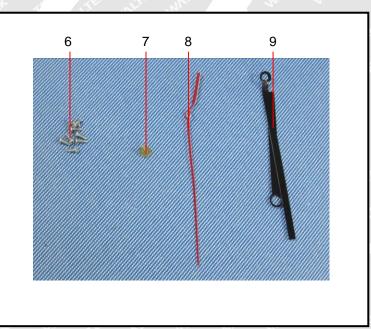
Sample Photo:



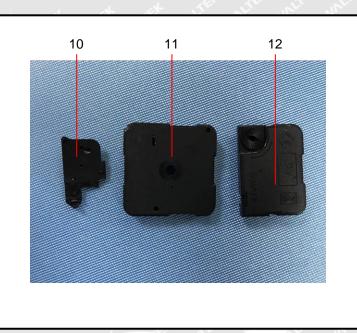


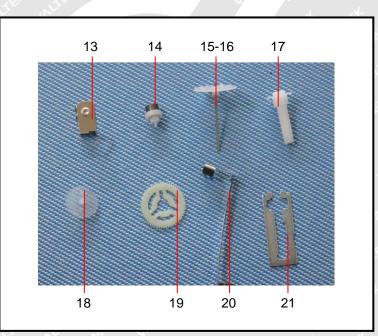
Photograph of parts tested:





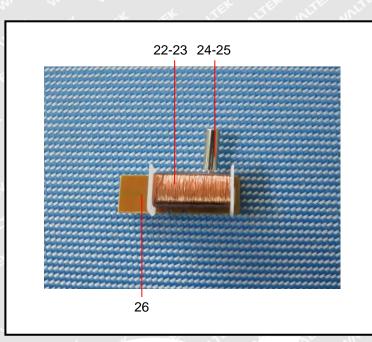


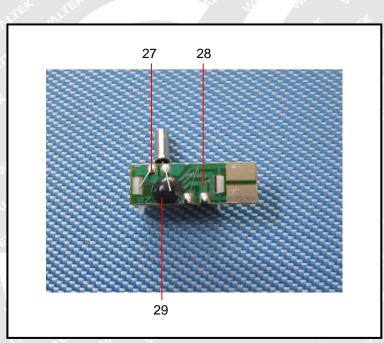




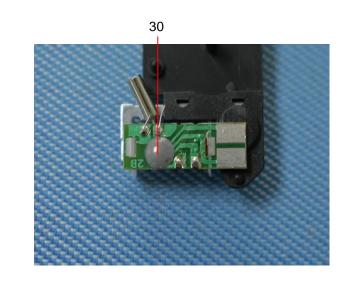
Page 11 of 12











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