



TEST REPORT

Reference No	<u>.</u> :	WTF17F1092625C
Applicant	:	Mid Ocean Brands B.\

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

Kowloon, Hong Kong.

Manufacturer 109979

Sample Name : Keyring cable(micro), Keyring cable(Type C)

Model No. : MO9170, MO9171

Test Requested.....: In accordance with the RoHS Directive 2011/65/EU

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 IEC62321-4:2013, determination of Mercury by ICP-OES

4) With reference to IEC62321-5:2013, determination of Lead and Cadmium by ICP-OES

5) With reference to IEC 62321: 2008 and IEC 62321-7-1:2015, determination of Hexavalent Chromium by UV-Vis

6) With reference to IEC62321-6:2015, 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/EU

Date of Receipt sample : 2017-10-17

Date of Test 2017-10-17 to 2017-10-19

Date of Issue 2017-10-27

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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Approved by:

Reference No.: WTF17F1092625C

Page 2 of 12



Test Results:

Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
i.j.t	TEX TEX LIFE OUT OF	Cd	BL		Et
	min my m	Pb	BL	LIER OLIER MITE	WILL M
1	White plastic shell of plug	Hg	BL	NA	Comply
	tile avril when mur and	Cr	BL	TEX TEX LIER	NITE INLT
7,		Br	BL	with the the r	1 20
	et alie will will will	Cd	BL	at at at a	LEK LIE
M	in in	Pb	BL	Will war war	"In
2	White plastic shell of plug	Hg	BL	NA NA	Comply
W.	mer mer me in	Cr	BL	ier alter while while	MALI
	at at let let	Br	on BLvi	211, 21, 2,	.*
IE.	WILL MALL MAL MAL WILL	Cd	BL	t tet tet tet	الله المالي
`		Pb	BL	Wr. Aur Mr.	20, 20
3	Silvery magnetic sheet	Hg	BL	Cr ⁶⁺ : ND	Comply
41	111 111 1	Cr	IN	with while with wi	11/1
	A TEX STEE STEE WITE	Br W	BL		et et
MILL	Mur. Aug. Aug.	Cd	BL	THE STEE WITH WALL	WE
4.	at at a stell	Pb	BL W	'n' 'n' '.	
4	Silvery metal ring	Hg	BL	NA NA	Comply
	n the	Cr	BL	wer were we	20, 20
EX	ITEX ALTER WITE WAY	Br	BL	A A A	TEX
11	20, 20,	Cd	BL	With while while a	V. 24.
	EX TEX ITEX LITER	Pb	BL	7	et e
5	Silvery metal shell of plug	Hg	BL	Cr ⁶⁺ : Negative	Comply
	at let tet tet	Cr	W VI		1 *
LIE		Br	BL	t set text til	
71	ES AIA IV	Cd	BL N	The Mary Mary	70,
TEX	THE V A V A	Pb	BL	C A LET LET	TEX
6	Dark grey plastic core of plug	Hg	BL	NA NA	Comply
+	LEK TEK STEK STEK SIN	Cr	BL	- 12 × 1	let d
110	in mer me me	Br	+ BL+	TEX LIFE WITE I	LII MALI
	a the set set	Cd	BL	m. m. m.	
	WILL MALL MALL WALL	Pb	BL	et tet tet	E. OLIE.
7	Silvery metal pin of plug	Hg	BL	NA NA	Comply
TEX	LIER SLIER WILL MAIL	Cr	BL		TEX
	The Mr. Mr.	Br Br	BL	E WILL WILL MULL	11/2 1
.+	TEX TEX ITEX SITES ON	Cd	BL	The state of	, est
	ur, aur aur au	Pb	BL	TEX STEE STEE	UNLI WA
8	Solder of plug	Hg	BL	NA	Comply
, mi	TEN WILL MALL WILL WILL	Cr	BL	LET TEX TEX	IER WITE
	The state of the s	Br	BL	in whi will me	20,







Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS	
,ex		Cd	BL	a de de	LEX.	
	The Aura Aura Aura	Pb	BL	ALTER WITE WHILE	MUC. M	
9	Golden-silvery metal sheet of plug	Hg	BL	NA	Comply	
	rite anti mor mur mus	Cr	BL	TEX TEX LITER	NITE WALL	
		Br	BL	Wir Mr Mr M		
· .	EL STE WILL MULT MULT	Cd	BL	at at all a	EX LIE	
	711 711	Pb	BL	DDD - ND	211	
10	White plastic sheet of plug	Hg	BL	PBBs : ND	Comply	
	mer, mer me in	Cr	BL	PBDEs : ND	WILL I	
L	at let ret ret of	Br	IN INVI	14, 14, 1,	. +	
TE	WILL MUST AND AND AND	Cd	BL .	F TEX LIER LITER	WILL WILL	
	the state of	Pb	BL	Wr. Mr. Mr.	20.	
11	Green plastic wire jacket	Hg	BL	NA NA	Comply	
	111 111 1	Cr	BL	write while while we	in the	
	t tet the til with	Br W	BL	7 × ×	et let	
. Whi	when me my	Cd	BL	CIE SITE WITE WAL	NUL	
	at at a stell	Pb	BL	- 'n, 'n, ',	.+	
12	Solder	Hg	BL	NA NA	Comply	
	n s	Cr	BL	MUT NUT WE	10, 11.	
	ITEX SLIER WITE ! WA	Br	BL	at at let	JEX J	
7	- 14 14 1	Cd	BL	WILL WILL A	V. M	
	EX TEX TEX LITE	Pb	BL	7, 7,	et et	
13	Green plastic wire covering	Hg	BL	NA CONTRACTOR	Comply	
		Cr	SI BL	is in in		
	The True True	Br	BL	- TEV TEV JIE	it with	
a_{tr}		Cd	BL N	y Mr. M.	20. 0	
	THE VALUE OF	Pb	BL	at the	TEX	
14	Silvery metal wire	Hg	BL	NA	Comply	
	EX TEX STEX STEX STEX	Cr	BL		it de	
~ ~1	ri wir wir was	Br	# BL	TEX STEE STEE	LITE MALIN	
	1	Cd	BL			
	er write white war war	Pb	BL	et let let l	EK WITE	
15	White plastic wire covering	Hg	BL	NA NA	Comply	
		Cr	BL	a state of	TEX	
	m m m	→ Br →	BL	E NIT INIT WALL	W W	
TEX.	at let let let u	Cd	BL	700		
	bry mer mer my	Pb	BL BL	TEX SITES OUTER	Comply	
16	Silvery metal shell of plug	Hg	BL	Cr ⁶⁺ : Negative		
	TEX WITH WILL MALL WILL	Cr	IN	et let let	TEK OLIE	
	74, 74	Br	BL	IL TO WALL WALL WA	21,	







Part No.	Part Description	Result	of XRF	Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS	
et	THE STEE STEE WITE OF	Cd	BL	- A A	Alt.	
	mr. mr. mr. m.	Pb	BL &	LIER WILL WILL	Whi Wh	
17	Dark grey plastic sheet of plug	Hg	BL	NA	Comply	
	rie write mr. Mr. Mr.	Cr	BL	TEK TEK TEK	ALTE MALTE	
		Br	BL	alor and any		
- 4	et alie alie and wal	Cd	BL	at let let i	EK LIE	
	700 700	Pb	BL	rigginality with any	211.	
18	Silvery metal sheet of plug	Hg	BL	Cr ⁶⁺ : Negative	Comply	
	mr. mr. m.	Cr	∠⊘IN ∠	E SLIER WILL WILL	Wer. M	
	at at alt all a	Br	N BL	1/11/11/11/11		
TE	Will MULL MU MIN	Cd	BL	- TEX TEX TEX	WILL MI	
		Pb	BL	re, mer me.	20, 72	
19	Silvery metal sheet of plug	Hg	BL	Cr ⁶⁺ : Negative	Comply	
	An An A	Cr	Ø IN	write while whi we	in the	
	t get get all mate	Br W	BL		at let	
ant's	Mr. Mr. Mr.	Cd	BL	THE SITE WITE WALL	ML	
	at at a see	Pb	BL	1/11. 11. 1.		
20	Dark grey plastic core of plug	Hg	BL	NA NA	Comply	
	in the state of	Cr	BL	wer were we	20, 20.	
	TEX STEEL WITE . TAN	Br	BL	at at let	JEK J	
11	211, 22, 2	Cd	BL	NITE WALL WALL V	Ve m	
	EX TEX TEX LIE	Pb	BL		et et	
21	Silvery metal pin of plug	Hg	BL	NA NA	Comply	
	A A A A A	Cr Cr	SUBL O	Mu III. In.	, , , , ,	
	The strain was the	Br	BL	to the state of	e alter	
24		Cd	BL N	in the Miles	70. 1	
	TEF V S V S	Pb	BL	LIT LET	TEX	
22	Chip capacitor of plug	Hg	BL	NA	Comply	
	EX TEX TEX LIER IN	Cr N	BL	<i>i</i> n 2.	at de	
	TIL WITH AND AND AND	Br	BL.	TEX STER WITER	LITE WALL	
		Cd	BL	4 - 4 - 4 - 4		
	RUTE INITE WALL WALL	Pb	*OL	ex sex sex s	EF STEEL	
23	Chip resistor of plug	Hg	BL	NA WA	Comply	
		Cr	BL	L 14 18	- LEX	
	Mue Me Me Me	Br A	BL	E WITE WITE WALL	Mr. M	
.4	at at the the	Cd	N BL	20. 20.	,t	
	Will mil my my	Pb	BL A	TEX LIEX LIFE	Comply	
24	Solder of plug	Hg	BL	NA W		
	LEE WILL MILE MULL AND	Cr	BL	et et tet	TEX LIE	
	11, 12,	Br	BL	Will MULL AND	1/11	



Reference No.: WTF17F1092625C P



Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS	
-c+	THE THE LIFE OUT .	Cd	BL	to the state of	at the	
		Pb	BL &	- Life - Slife - Mile	White wh	
25	Green PCB of plug	Hg	BL	PBBs : ND PBDEs : ND	Comply	
		Cr	BL			
-2,		Br	IN	Are the the	2	
	alte intit and while	Cd	BL	at at all a	CENT LIET	
MUT		Pb	BL	it was was	Me	
26	Orange plastic wire jacket	Hg	BL	NA	Comply	
INLI'		Cr	BL	alter with white	WILL	
		Br	BL _W	111, 111, 11		
TE	The Mar My My	Cd	BL	TEX TEX STEE	Will all	
10		Pb	BL	Wr. Mur Mr.	2, ,	
27	Blue plastic wire jacket	Hg	BL	TEK NA WITEK	Comply	
in		Cr	BL			
		Br W	BL			
MULL	White plastic wire jacket	Cd	BL	NA NA	Comply	
		Pb	BL			
28		Hg	BL			
		Cr	BL	MUT. MUT. MIL	12.	
EX	TEX LITER MITE	Br	BL	at at all	JEK J	
11	and the second	Cd	BL	VIL MULL MULL A	10. 14.	
		Pb	BL		LET LEY	
29	Red plastic wire jacket	Hg	BL	NA	Comply	
		Cr	JUL BL JUL	20, 20, 2,	4	
LIE		Br	BL	the set of the set	, alte	
71		Cd	mu BL m	in the things	70.	
TEK	Black plastic wire jacket	Pb	BL	LET TEX	Comply	
30		Hg	BL	NA		
** "IL		Cr	BL		it is	
		Br	BL	THE LIER SITE	The Marin	



Reference No.: WTF17F1092625C

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 \leq (70-3 σ) $<$ IN $<$ (130+3 σ) \leq OL	LOD < IN < (150+3σ) ≤ 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	$BL \le (700-3\sigma) < IN < (1300+3\sigma) \le OL$	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 ≤ (500-3σ) < IN</td></in<>	BL ≤ (500-3σ) < IN
Br	BL ≤ (300-3σ) < IN	of write 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.
- (7) MDL= Method Detection Limit in wet chemical test

	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
5	MDL	2.50	2	2	2	0.1	5	5 4

The MDL for single compound of PBBs and PBDEs is 5mg/kg, MDL of Cr⁶⁺ for polymer and composite sample is 2mg/kg and MDL of Cr⁶⁺ for metal sample is 0.1µg/cm².

(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 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.

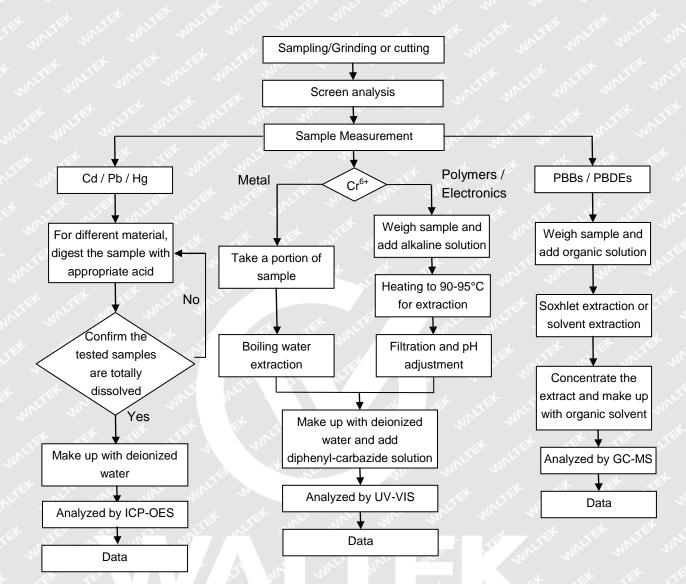
Information on storage conditions and production date of the tested sample is unavailable and thus Cr⁶⁺ results represent status of the sample at the time of testing.

(9) * = According to the declaration from client, the source of lead in test sample could be from the glass or ceramic material of that electronic component which is exempted by Directive 2011/65/EU.

Reference No.: WTF17F1092625C Page 7 of 12



Measurement Flowchart:



*

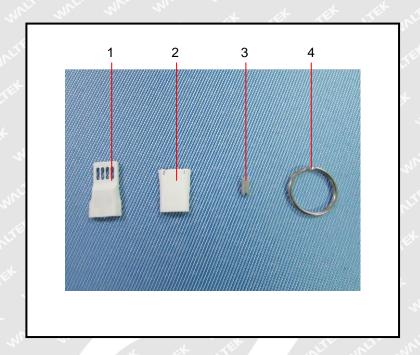
Sample Photo:

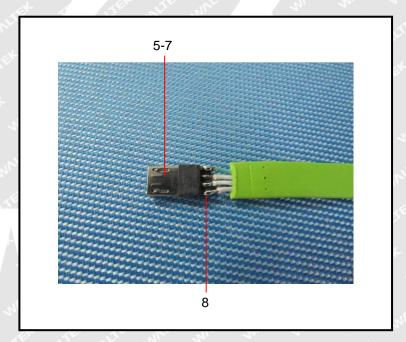




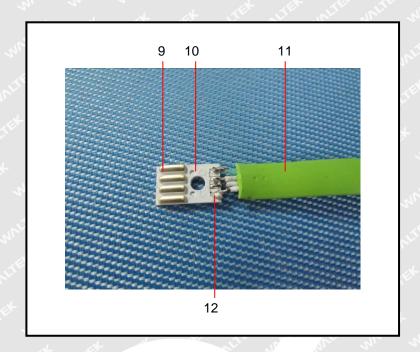
W

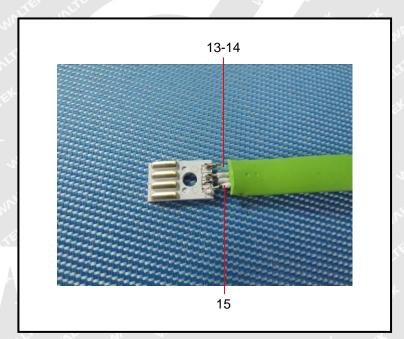
Photograph of parts tested:



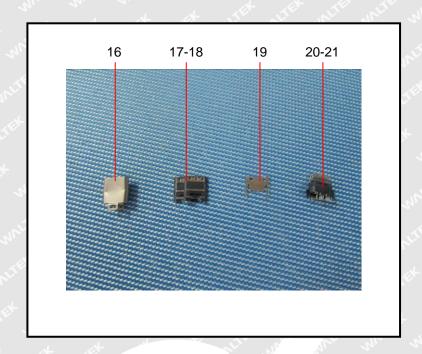


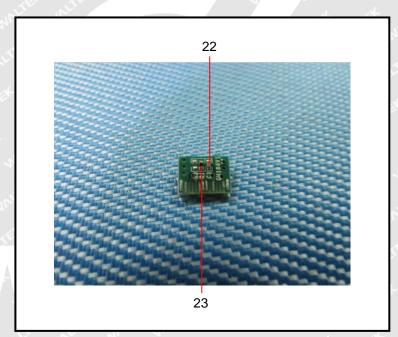




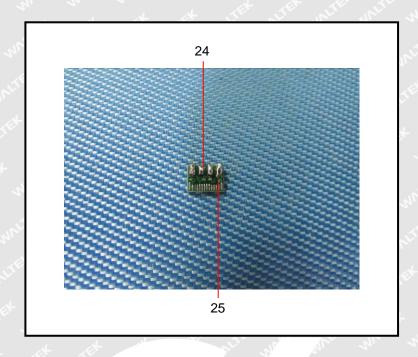


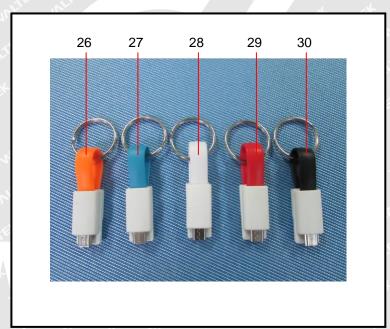












===== End of Report =====