

中国认可 国际互认 检测 TESTING CNAS L6478



TEST REPORT

Reference No	WTF19F03017466C
Applicant :	Mid Ocean Brands B.V.
Address	7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon,
	Hong Kong
Manufacturer :	114036
Sample Name	Pedometer bracelet
Model No	MO9136
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 62321-2:2013, disassembly, disjointment and mechanical sample preparation
	 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)
Date of Receipt sample :	2019-03-26
Date of Test	2019-03-26 to 2019-04-01
Date of Issue	2019-04-01
Test Result :	Please refer to next page (s)
Remarks:	is with the set of the set of the
The results shown in this test re	port refer only to the sample(s) tested; this test report cannot be

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Prepared By: Waltek Services (Foshan) Co., Ltd. Address: No.13-19, 2/F., 2nd Building, Sunlink International Machinery City, Chencun, Shunde District, Foshan, Guangdong, China Tel:+86-757-23811398 Fax:+86-757-23811361 avide mail:info@waltek.com.cn

Compiled by:

Nelson.Liang/ Project Engineer

Waltek Services (Foshan) Co., Ltd. http://www.waltek.com.cn

prov d by: MA STRDIBO.Zhang/ Lab Manager

Page 1 of 15

Reference No. : WTF19F03017466C



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)	Conclusion on RoHS
m	an an an	Cd	BL	IT MITCH WALT WAT	M
.tt	ret ret with a	Pb	BL		.et
1	Silvery metal sheet of buckle	Hg	BL	Cr ⁶⁺ : Negative	Comply
.t	at let tet the set	Cr	IÑ		at a
	it with which with the	Br	BL ST	THE STREE WITH A	Mite wat
	t at all the tet	Cd N	BL	24 - 211 - 227 - 2	et at
n17	white white whe whe	Pb	BL	Et JEEK NITER IN	IE. WALTE
2	Black rubber watch band	Hg	BL V	NA	Comply
NUTER	Intre water water water	Cr	BL	at the set set and	NUTER
	a to the left	A Br	John BL	when when my	Za.
10	with mit white where we	Cd	BL	t let set set	NITE
4		Pb	BL	Inthe winter where	211. 24
3	Silvery metal strip of buckle	Hg	BL	Cr ⁶⁺ : Negative	Comply
m	with the state	Cr	IN	white white white we	
	t stat with white	Br St	BL	e at the a	et set
m	SHI SHI SHI	Cd	BL	LT NALT WAL WAL	m
.et	4 Black rubber sheet	Pb	BL	NA	Comply
4		Hg	BL		
*		Cr	BL		
N		Br	BL		Intit wat
	at at all all	Cd	BL	The second second	1 10
in.	the and white white we	Pb	BL	THE STAR STREET	TE. NALTE
5	Silvery metal cover	Hg N	JUBL 4	Cr ⁶⁺ : Negative	Comply
NUTE	and white white the	Cr	IN	t all all all	
		Br	N BL-N	and the solution	20.
JEK	ALTER ST.	Cd	BL		ALTER
		Pb	BL	all an all	24. 25.
6	Silvery metal tube	Hg	BL	NA A	Comply
-2h		Cr	BL	white water water w	in the
	at itelt sitely outer solution	Sur Br	BL	L A At	et set
MUL	when the start	Cd 🖉	BL	ster unite white white	with
1th	TEX LIFE ALTER MUTE	Pb	SIL SI		- 14
7	Silvery metal spring	, Hg	BL	NA	Comply
A	alt alt alt alt with a	Cr	BL	Son is a st	it.
	net when when all	Br	BL 🖉	TIEK OUTER OUTER	until whit
	at let tet the mus	Cd	BL	The ship is	1
in.	white white white we	Pb	BL		TE WALTE
8	Black plastic shell	Hg N	BL	PBBs : ND PBDEs : 6	Comply
NUTE	white white white wh	Cr	BL		an Intres
v_{n}	i i at at	Br	IN N	the wat wat with	20.



Part No.	Part Description	Result o	f XRF	Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
J.	with out wat wat w	Cd	BL	t at at a	A LIFE
		J Pb J	BL	it wait wat wat	-mr -
9	Black plastic button	Hg	BL	PBBs : ND	Comply
	unt jun ju	Cr	S BLS	PBDEs : 8	mur m
	ret ret uset when when	Br	IN		At 1
N	- m m su	Cd	BL	UTE INTE MATE	U. M.
	at let set set site	Pb	BL	2 m x	A At
10	Transparent plastic cover of	Hg	BL	NAN	Comply
	screen	Cr	BL S	the star in	L At
	inite white when when	Br	BL	et the state with	MITE. N
		Cd	BLN	- Mut Mut an	
	INTER INTERVICE WALL WALL	Pb	BL /	+ set set set	NUTER IN
11	Transparent glass sheet of screen	Hg	BL	NA NA	Comply
	TEX NIFER MATER WALTE	Cr	BL	the set set	
	30 30 5	Br	BL	White white white we	
	t the street of some s	Cd	BL		et jet
	when when we a	Pb	BL	it is write write write	ma
12	Dark grey plastic film of screen		Hg BL NA	Comply	
		Cr	BL	The international superior	when w
		Br	BL	- Nº ···································	it .
. N	in the second second	Cd	BL	LIE NITE MIT	Comply
	at at at at	Pb	BL	<u>-</u>	
13	Silvery metal film of screen	Hg	BL	NA STAN	
	A A A AT	Cr Cr	BL 4	n m m m	
	and and a super start	Br	BL		A NUTE
		Cd	BL BL	S AND AND	
		Pb	BL	4 A TEX JER	NUTER IN
14	Black rubber sheet of screen	Hg	BL	NA NA	Comply
	TEX NITER MITE MAIL MA	Cr	BL	at at at	JEK JI
		Br	BL	METE WALL WALL W	in the
	at which which which is	Cd	BL	s at at	et jet
	when the star of the	Pb 🖉	BL	NI EN WALTE WALT WAL	WAL
15	Silvery metal sheet	Hg	BL	NA	Comply
	me me m	d⊢ Cr ∠d∽	BL	ie intre intre intre	ne in
	t let let let let w	Br	BL	so so t	1t
2	ver me me m	Cd	d BL	LIFE MITE MITE	unt uni
	at let let stat mi	Pb V	BL	All the se	1 0
16	Silvery body of oscillator	Hg	BL	NA SNA S	Comply
	the state of the	Cr N	BL	m m m m	d d
	out white white white	Br	BL	at the tak is	at aller



Part No.	Part Description	Result	of XRF	Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
JE	white mile white where	Cd	BL	t at at 5	A NITER
Mr.	su su st st	Pb J	BL	it white white where	20. 1
17	Silvery metal pin of oscillator	Hg	BL	NA NA	Comply
2	in sur sur	√ Cr⊘∽	S BLS	white white white	mer m
*	TEX , TEX , WIEL , MITE, MAI	Br	BL	s at at	Jet 5
-n	The In the	Cd	BL	WITE MALT WALL V	the she
1	t ret ster ster mile	Pb w	BL		at at
18	Silvery metal strip	Hg	BL	NA	Comply
	at not not one	Cr.M.	√ [™] BL →	n 20, 20 x	t it
NUT	the watt wat wat wat	Br	BL	18 LIEK NUTER WITE	WALTE V
	to at all all	Cd	M BLM	In In I	A
E.	NET WITT WALL WIT WIT	Pb	BL 🧹	* Tet Tet Tet	INLIE NN
19	Transparent plastic film	Hg	BL	NA NA	Comply
-	TER MUTE WALTE WALT	Cr	BL	let set set.	LIEK INLIE
-w	Nº A A	Br	BL	alter when when we	
. J ^e	atter white white white	Cd	BL	t at at a	et lier
sur	Jun Jun St	Pb	BL	it would write write	with
20	20 Silvery metal sheet	Hg	BL	NA A AND	Comply
		Cr	BL		nur n
it.		Br	BL		the s
4	and the application	Cd	BL	NUTE INUTE MALLY	Comply
	at the tex the	Pb	BL		
21	Chip capacitor	Hg	BL	NA ST NA	
	at at at at	JCr JCr	J∕∩BL ≺	1. m. m.	
NUTE	We the Au	Br	BL	THE ALTER MUTE	NINITE V
		Cd	BL BL	, <u>20</u> , 20	
JER .	nute .	Pb	BL	e a ret stret	INLIER NO
22	Chip IC	Hg	BL	PBBs : ND PBDEs : ND	Comply
t i	TER INTER WATT WATT WAT	Cr	BL		LIFE MIT
-211	sur at at	Br	IN	Mill water water w	1 m
1	t aller oute while while	Cd Cd	BL	at at at a	et tet
M	all and a state	Pb de	BL	nt white white white	- nur
23	Chip capacitor	Hg	BL	NA	Comply
	Mr. Mr. W. W.	Cr 📌	BL	IE MATE MALL MAL	when w
*	let tet with with w	Br	BL	A A	jet ,
12	it was an an	Cd 🗲	BL 🖉	ALTER INTE MAIL	nur. nur
	at all all all all whit	Pb B	BL	The the second	at a
24	Solder	Hg	,⊢ BL	NA STA	Comply
	. It let get with	N ¹² Cr N ¹²	,∬BL →	ol and an	1 1
J.T.E.	mill white white white	Br	BL	at all all all	NITE



Part No.	Part Description	Part Description Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
LIEF	NUTER MALTE WALL WALL	Cd	BL	at all all all	at intrest
m		Pb St	BL	2 WILL WALL WALL	20. 2
25	Green-orange PCB	Hg	BL	PBBs : ND PBDEs : ND	Comply
w. w		d Crd⁺	BL		me m
at 3	Et allEt intret intre intre in	Br	IN	t it it	.1tt .5t
m	101 - 100 - 11 - 1	Cd	BL	white white white w	we we
t set		Pb M	BL		et jet
26	26 Silvery metal sheet	Hg	BL	NA NA NA	Comply
14		Cr.sh	AL BL A	the street wither white	
MALTE		Br	BL		
	at let tet tet	Cd	Mr BLM	THE THE A	the second se
LITER IN		Pb	BL 🖉	- JEK STEK STER	NALTE MAL
27	Silvery metal sheet	Hg	BL	NA	Comply
EF NITE		Cr	BL	ret stet stret a	LIEN WALTE
-20.		Br	BL	Mr. Mar Mar M	
- JIE		Cd	BL	at left fift it	et aller
2m		Pb	BL	it wants white where	24 1
28	Silvery metal screw	Hg	BL	NA A	Comply
w. w		Cr	BL	NALTE WALL WAL	Mr. M.
let 1	Et ITEL AITER NO	Br	BL	at at at	At .
N NY	we we we	Cd	BL	NITE NALTE WALL V	IL MA
*		Pb	BL		let let
29	Silvery metal screw	Hg	BL	NA NA	Comply
		on Cront	JUBL J		t st
INLIE		Br	BL	THE STREET NUT	White w



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	$BL \le (70-3\sigma) < IN < (130+3\sigma)$ $\le OL$	$BL \le (70-3\sigma) < IN < (130+3\sigma)$ $\le OL$	$LOD < IN < (150+3\sigma) \le OL$
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< td=""><td>BL ≤ (500-3σ) < IN</td></in<>	BL ≤ (500-3σ) < IN
Br	BL ≤ (300-3σ) < IN	- at the set of	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, 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	Ci	6+	PBB	PBDE
Units	mg/kg	mg/kg	mg/kg	mg/kg	µg/cm ²	mg/kg	mg/kg
MDL ³	2	2	2	2	0.1	5,0	v ¹ 5 v

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.



2. Phthalates (DEHP, BBP, DBP, DIBP)

Test items	Result (mg/kg		Limit
me m m	No.2	No.4	(mg/kg)
Bis(2-ethylhexyl)-phthalate (DEHP)	<50	<50	1000
Dibutyl phthalate (DBP)	<50	<50	1000 1
Benzylbutyl phthalate (BBP)	<50	<50	1000
Diisobutyl phthalate (DIBP)	<50	<50	1000

Test items	Result (mg/kg	Limit	
	No.8+No.10 [△]	No.9	(mg/kg)
Bis(2-ethylhexyl)-phthalate (DEHP)	<50	<50	1000
Dibutyl phthalate (DBP)	<50	<50	1000
Benzylbutyl phthalate (BBP)	<50	<50	1000 🔊
Diisobutyl phthalate (DIBP)	<50	<50	1000

Test items	Result (mg/kg	Limit	
	No.12	No.14	(mg/kg)
Bis(2-ethylhexyl)-phthalate (DEHP)	<50	<50	1000
Dibutyl phthalate (DBP)	<50	<50	1000
Benzylbutyl phthalate (BBP)	<50	<50	1000
Diisobutyl phthalate (DIBP)	<50	<50	1000

Test items	Res (mg	Limit	
white we want when the	No.19	No.11+No.16+No.21 [△]	(mg/kg)
Bis(2-ethylhexyl)-phthalate (DEHP)	<50	<50	1000
Dibutyl phthalate (DBP)	<50	<50	1000
Benzylbutyl phthalate (BBP)	<50	<50	1000
Diisobutyl phthalate (DIBP)	<50	-<50	1000



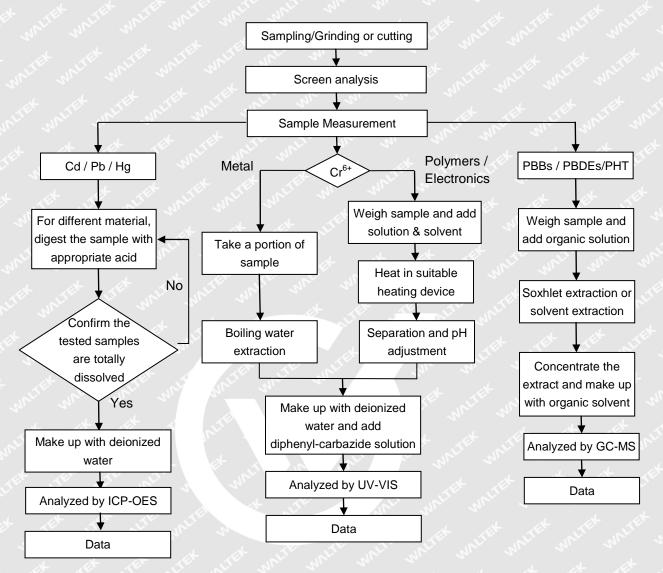
Test items	Result (mg/kg) No.22+No.23+No.25 [△]	Limit (mg/kg)
Bis(2-ethylhexyl)-phthalate (DEHP)	<50	1000
Dibutyl phthalate (DBP)	<50	1000
Benzylbutyl phthalate (BBP)	<50	1000
Diisobutyl phthalate (DIBP)	<50	1000

Note:

- (1) "<" = less than
- (2) mg/kg = milligram per kilogram= ppm
- (3) "△"= As client's requirement, the testing was conducted based on mixed components, the test result is for reference only.



Measurement Flowchart:





Sample Photo:



Product pictures provided by client:



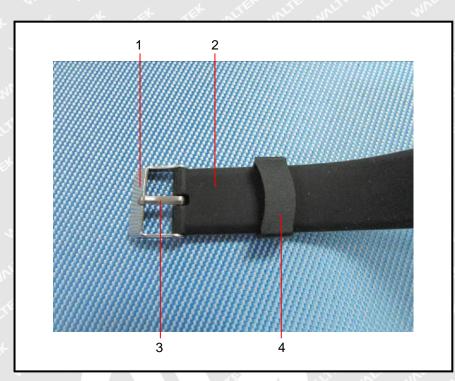


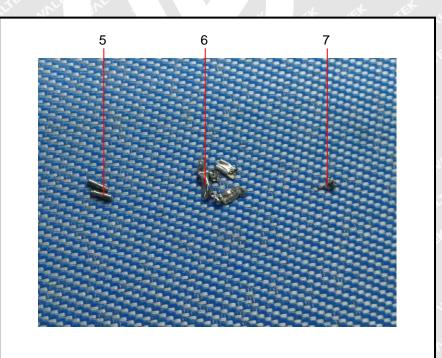




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Photograph of parts tested:

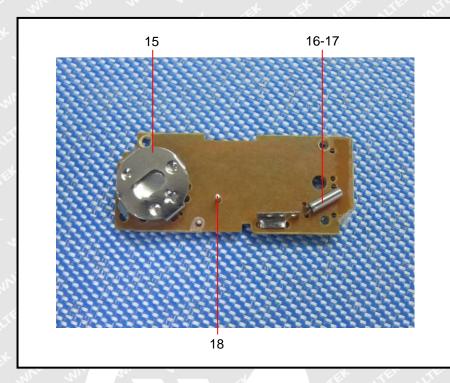


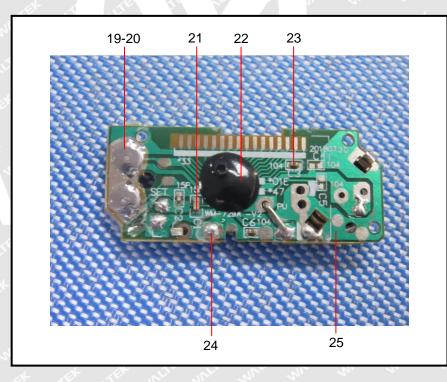




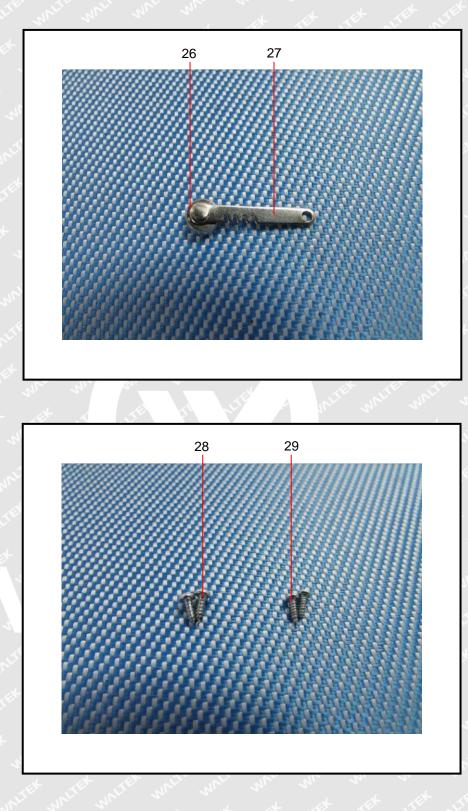












===== End of Report ======