



TEST REPORT

Report No.: ZKS161100229

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Applicant :
Address :

Manufacturer :
Address :

Products : activity tracker
Brand Name :
Model No. : WB102
Receiving Date : 2016-11-29
Testing Period : From 2016-11-29 to 2016-12-08
Test Requested : As specified by client, to test below items with reference to
and Conclusion : RoHs(Restriction of Hazardous Substances) directive 2011/65/EU on
submitted samples
- Heavy metal (Pb, Cd, Hg and CrVI) Content **PASS**
- Polybrominated Biphenyls (PBBs) and
Polybrominated Diphenyl Ethers (PBDEs) Content **PASS**
Test Result : Refer to the following page(s)
Remark : -The result related only to the items tested;
- the test items were specified by client;

Authorized By:

For Shenzhen ZRLK Testing Technology Co., Ltd.

Ailis Ma

Ailis Ma
Technical Supervisor



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1. Tested Subject Description:

No.	Sample Description	No.	Sample Description
(1)	Activity Tracker(Silvery metal)	(18)	Toggle Switch(Black Plastic)
(2)	Activity Tracker(Black Plastic)	(19)	Toggle Switch(Silvery metal Sheet)
(3)	Displayer(Transparent Glass)	(20)	Toggle Switch(Silvery Metal Pin)
(4)	Displayer(Black Sponge)	(21)	Polymer Li-ion Battery
(5)	Displayer(Yellow FPC)	(22)	Polymer Li-ion Electronic Wire(Red PVC Cover)
(6)	Shell Front (Black Plastic)	(23)	Polymer Li-ion Electronic Wire(Black PVC Cover)
(7)	Shell Back(Black Plastic)	(24)	Polymer Li-ion Electronic Wire(Silvery Metal Wire)
(8)	Shell Back(Gold metal)	(25)	Chip Capacitor (Brown Body)
(9)	Screw(Silvery metal Screw)	(26)	Chip Capacitor(Silvery meta Pin)
(10)	Vibrator(Silvery metal Sheet)	(27)	Diode(Black Body)
(11)	Vibrator Electronic Wire(Red PVC Cover)	(28)	Diode(Silvery metal Pin)
(12)	Vibrator Electronic Wire(Blue PVC Cover)	(29)	SOP(Black Body)
(13)	Vibrator Electronic Wire(Silvery metal Wire)	(30)	SOP(Silvery metal Pin)
(14)	Soldering Tin(Silvery metal)	(31)	IC(Black Body)
(15)	PCB(Blue PCB)	(32)	IC(Silvery metal Pin)
(16)	SMD(Black Body)	(33)	Chip Resistor(Black Body)
(17)	SMD(Silvery metal Pin)	(34)	Chip Resistor(Silvery metal Pins)



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2. XRF Screening Test Result:

Tested Items	Results									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lead (Pb)	BL	BL	BL	BL	BL	BL	BL	OL*	BL	BL
Cadmium(Cd)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Mercury(Hg)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Chromium(Cr)	BL	BL	BL	BL	BL	BL	BL	BL	IN	BL
Bromine(Br)	---	BL	---	BL	IN	BL	BL	---	---	---

Tested Items	Results									
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Lead (Pb)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Cadmium(Cd)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Mercury(Hg)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Chromium(Cr)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Bromine(Br)	BL	BL	---	---	BL	BL	---	BL	---	---

Tested Items	Results									
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
Lead (Pb)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Cadmium(Cd)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Mercury(Hg)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Chromium(Cr)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Bromine(Br)	BL	BL	BL	---	BL	---	BL	---	BL	BL

Tested Items	Results			
	(31)	(32)	(33)	(34)
Lead (Pb)	BL	BL	BL	BL
Cadmium(Cd)	BL	BL	BL	BL
Mercury(Hg)	BL	BL	BL	BL
Chromium(Cr)	BL	BL	BL	BL
Bromine(Br)	BL	---	BL	---

BL = below limit by XRF analysis

OL = over limit by XRF analysis

D = Detected (questionable, need further chemical analysis)

* = The screened result was found by XRF and further chemical test was suggested.

Remark:

(1) It is the result on total Br while test PBBs and PBDEs by EDXRF. It is the result on total Cr while test Hexavalent Chromium by EDXRF.

(2) Results are obtained by EDXRF for primary screening, and chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (Cr(VI)) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321 Ed 1.0

(Unit:mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq 70-3\sigma < D < 130+3\sigma \leq OL$	$BL \leq 70-3\sigma < D < 130+3\sigma \leq OL$	$BL \leq 50-3\sigma < D < 150+3\sigma \leq OL$
Pb	$BL \leq 700-3\sigma < D < 1300+3\sigma \leq OL$	$BL \leq 700-3\sigma < D < 1300+3\sigma \leq OL$	$BL \leq 500-3\sigma < D < 1500+3\sigma \leq OL$
Hg	$BL \leq 700-3\sigma < D < 1300+3\sigma \leq OL$	$BL \leq 700-3\sigma < D < 1300+3\sigma \leq OL$	$BL \leq 500-3\sigma < D < 1500+3\sigma \leq OL$
Cr	$BL \leq 700-3\sigma < D$	$BL \leq 700-3\sigma < D$	$BL \leq 500-3\sigma < D$
Br	$BL \leq 300-3\sigma < D$	----	$BL \leq 250-3\sigma < D$

3. The test results of chemical method:

(1) The test results of Lead (Pb):

Test Item	Results (mg/kg)
	(8)
Lead (Pb)	55

(2) The test results of Lead (Cr⁶⁺):

Test Item	Results (mg/kg)
	(9)
Chromium (VI) (Cr ⁶⁺)	ND

(3) The test results of PBBs & PBDEs:

Testing Item	Results
	(5)
Sum of polybrominated biphenyls (PBBs)(mg/kg)	ND
Monobromobiphenyl (MonoBB)	ND
Dibromobiphenyl (DiBB)	ND
Tribromobiphenyl (TriBB)	ND
Tetrabromobiphenyl (TetraBB)	ND
Pentabromobiphenyl (PentaBB)	ND
Hexabromobiphenyl (HexaBB)	ND
Heptabromobiphenyl (HeptaBB)	ND
Octabromobiphenyl (OctaBB)	ND
Nonabromobiphenyl (NonaBB)	ND
Decabromobiphenyl (DecaBB)	ND
Sum of polybrominated diphenyl ethers (PBDEs)(mg/kg)	ND
Monobromodiphenyl ether (MonoBDE)	ND
Dibromodiphenyl ether (DiBDE)	ND
Tribromodiphenyl ether (TriBDE)	ND
Tetrabromodiphenyl ether (TetraBDE)	ND
Pentabromodiphenyl ether (PentaBDE)	ND
Hexabromodiphenyl ether (HexaBDE)	ND
Heptabromodiphenyl ether (HeptaBDE)	ND
Octabromodiphenyl ether (OctaBDE)	ND
Nonabromodiphenyl ether (NonaBDE)	ND
Decabromodiphenyl ether (DecaBDE)	ND

4 Chemical test method:

Testing item	Testing method	Reporting limit
Cadmium (Cd) content	IEC 62321:2008 Edition 1.0 Part 8,9 and 10, by acid digestion and determined by AAS and ICP - OES	5 mg/kg
Lead (Pb) content	IEC 62321:2008 Edition 1.0 Part 8,9 and 10, by acid digestion and determined by AAS and ICP - OES	5 mg/kg
Mercury (Hg) content	IEC 62321:2008 Edition 1.0 Part 7, by acid digestion and determined by ICP - OES	5 mg/kg
Chromium (VI) (Cr ⁶⁺) content(for non-metal)	IEC 62321:2008 Edition 1.0 Annex C, by alkaline digestion and determined by uv-vis spectrophotometer	1 mg/kg
Chromium (VI) (Cr ⁶⁺) content(for metal)	IEC 62321:2008 Edition 1.0 Annex B, by spot test and boiling water extraction procedure	0.02 mg/kg (50cm ²)
polybrominated biphenyls (PBBs)& polybrominated diphenyl ethers (PBDEs)	IEC 62321:2008 Edition 1.0 Annex A, by solvent extraction and determined by GC/MS	5 mg/kg

5 RoHS requirement:

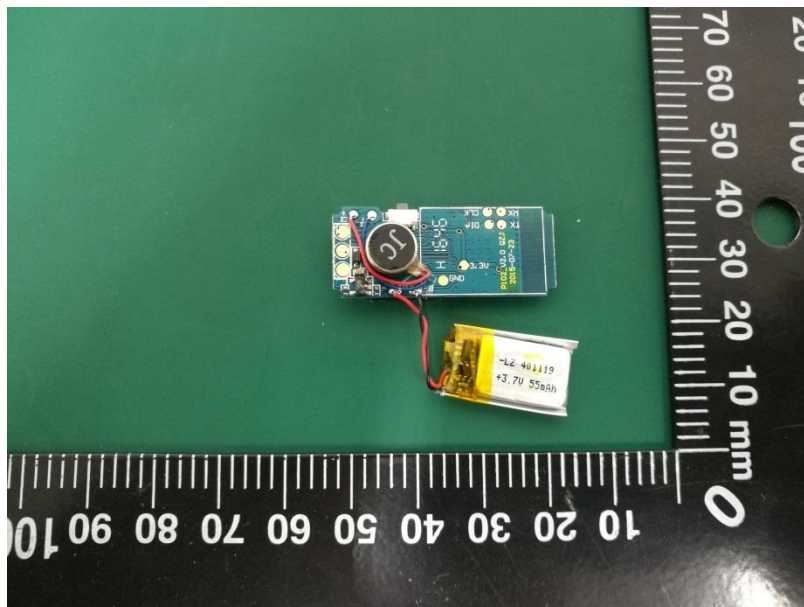
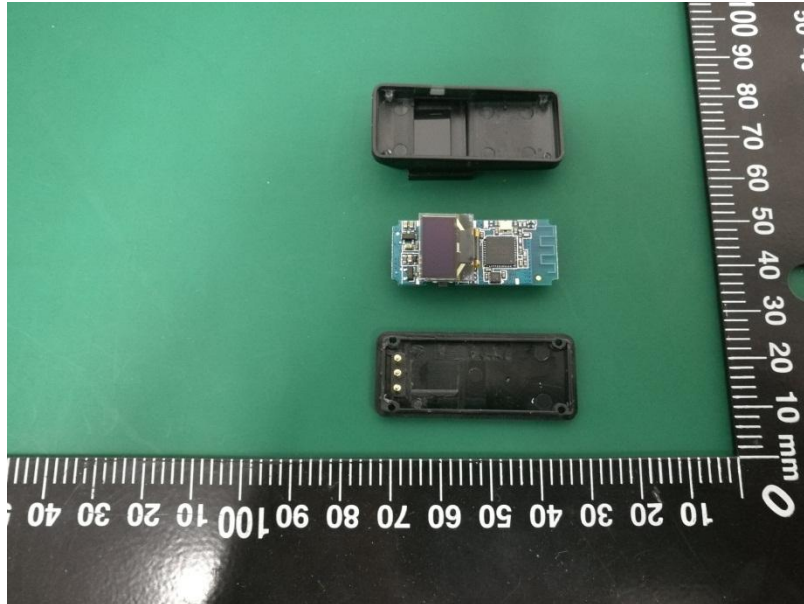
Restricted substances	Limits
Cadmium (Cd)	0.01% (100 ppm)
Lead (Pb)	0.1% (1000 ppm)
Mercury (Hg)	0.1% (1000 ppm)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 ppm)
Polybrominated biphenyls (PBBs)	0.1% (1000 ppm)
Polybrominated diphenyl ethers (PBDEs)	0.1% (1000 ppm)

The above limits were quoted from 2011/65/EU for homogeneous material.

6. Tested samples photos:



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*****End of Test Report*****