

TEST REPORT



Report No.: A1909150-C01-R07

Date: November 04, 2019

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Applicant:

Dongguan DG-TIME Industry Company ., Limited

Address:

6th Floor , B1 Building, Yuxiang Industrial Park , NO46 Fumin Road ,Jinxiao Tang .Fenggang Town , Dongguan , China

The following sample(s)and sample information was/were submitted and identified by/on the behalf of the client:

Sample Name	Power bank
Model No.	T49C
Reference Information	CNE-CPBP20XX
Sample Received Date	October 23, 2019
Testing Period	October 23 – November 04, 2019
Test Method & Test Result	Please refer to following pages.

Test Requested

As specified by client, according to RoHS Directive 2011/65/EU with amendment (EU) 2015/863 to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs), Phthalates(DBP, BBP, DEHP, DIBP) in the tested materials of the submitted sample(s).

Result

Pass

Tested by:

Shayan Zhang

Approved by:

Dylin

Reviewed by:

Tony Gmy

Date of issue:

November 04, 2019



Shenzhen Alpha Product Testing Co., Ltd.

Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

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Test Method

(1) XRF screening limits for regulated elements according to IEC 62321-3-1:2013 (Unit: mg/kg)

Element	Polymers	Metals	Composite material
Pb	$BL \leq (700-3\sigma) < X$ $< (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X$ $< (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X$ $< (1500+3\sigma) \leq OL$
Cd	$BL \leq (70-3\sigma) < X$ $< (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X$ $< (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X$ $< (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X$ $< (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X$ $< (1500+3\sigma) \leq OL$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$
Br	$BL \leq (300-3\sigma) < X$	N/A	$BL \leq (250-3\sigma) < X$

(2) Chemical screening limits for PBBs, PBDEs:

Test Item(s)	Screening limits(Unit: mg/kg)
Polybrominated Biphenyls (PBBs)	$BL \leq 200 < IN$
Polybrominated Diphenyl Ethers (PBDEs)	$BL \leq 200 < IN$

(3) Chemical screening limits for Phthalates

Test Item(s)	Screening limits(Unit: mg/kg)
Dibutyl phthalate(DBP)	$BL \leq 600 < IN$
Benzylbutyl phthalate(BBP)	$BL \leq 600 < IN$
Di-2-ethylhexyl phthalate(DEHP)	$BL \leq 600 < IN$
Diisobutyl phthalate(DIBP)	$BL \leq 600 < IN$

(4) Chemical Test

Test Item	Test Method	Test Instrument	MDL (mg/kg)	EU RoHS Limit (mg/kg)
Lead (Pb)	IEC 62321-5:2013	ICP-OES	2	1000
Cadmium (Cd)	IEC 62321-5:2013	ICP-OES	2	100
Mercury (Hg)	IEC 62321-4:2013 +AMD1:2017	ICP-OES	2	1000
Hexavalent Chromium (Cr(VI))	IEC 62321-7-2:2017 (non-metal)	UV-Vis	8	1000
	IEC 62321-7-1:2015 (metal)	UV-Vis	0.1($\mu\text{g}/\text{cm}^2$)	/
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS	5	1000
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS	5	1000
Phthalates(DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS	50	1000

Remark:

BL = Below the screening limit, OL = Over the screening limit
 X = The range of needing to do further testing, IN= Inconclusive
 MDL = Method Detection Limit, N/A = Not applicable
 3σ = The reproducibility of analytical instruments, LOD = Detection limit

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Tested Sample/Part Description

No.	Component Description	No.	Component Description
1	Rose gold plastic block of shell	17	Silvery metal mat of key-press
2	Black plastic shell of cover	18	Beige gray plastic seat of key-press
3	Black foam mat of shell cover	19	Digital display tube
4	Black plastic lower shell	20	Chip capacitor
5	Black fixing glue of lower shell	21	Chip resistor
6	Red wire sheath of battery connecting wire	22	Chip resistor
7	Black wire sheath of battery connecting wire	23	Chip triode
8	Silvery wire core of connecting wire	24	Copper coil of chip inductor
9	Black foam block of PCB board	25	Black magnet of chip inductor
10	Silvery metal of USB terminal seat	26	N929 IC
11	Black plastic of USB terminal seat	27	IP5306 IC
12	Silvery metal of Type-C port	28	ML10BJT01 IC
13	Black plastic of Type-C port	29	IC
14	Silvery gray metal of micro USB terminal seat	30	Soldering tin on PCB board
15	Black plastic of micro USB terminal seat	31	Green PCB board
16	Black plastic button of key-press	32	Silvery metal screw

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(1) Screening Result

Tested Item(s)	Screening Result (mg/kg)									
	1	2	3	4	5	6	7	8	9	10
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
Total Chromium (Cr)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Total Bromine (PBBs & PBDEs)	BL	BL	BL	BL	BL	BL	BL	N/A	BL	N/A
Dibutyl phthalate(DBP)	BL	BL	BL	BL	BL	BL	BL	N/A	BL	N/A
Benzylbutyl phthalate(BBP)	BL	BL	BL	BL	BL	BL	BL	N/A	BL	N/A
Di-2-ethylhexyl phthalate(DEHP)	BL	BL	BL	BL	BL	BL	BL	N/A	BL	N/A
Diisobutyl phthalate(DIBP)	BL	BL	BL	BL	BL	BL	BL	N/A	BL	N/A

Tested Item(s)	Screening Result (mg/kg)									
	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
Total Chromium (Cr)	BL	X*	BL	BL	BL	BL	X*	BL	BL	BL
Total Bromine (PBBs & PBDEs)	BL	N/A	BL	N/A	BL	BL	N/A	BL	BL	BL
Dibutyl phthalate(DBP)	BL	N/A	BL	N/A	BL	BL	N/A	BL	BL	BL
Benzylbutyl phthalate(BBP)	BL	N/A	BL	N/A	BL	BL	N/A	BL	BL	BL
Di-2-ethylhexyl phthalate(DEHP)	BL	N/A	BL	N/A	BL	BL	N/A	BL	BL	BL
Diisobutyl phthalate(DIBP)	BL	N/A	BL	N/A	BL	BL	N/A	BL	BL	BL

Tested Item(s)	Screening Result (mg/kg)									
	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
Total Chromium (Cr)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Total Bromine (PBBs & PBDEs)	BL	BL	BL	N/A	BL	BL	BL	BL	BL	N/A
Dibutyl phthalate(DBP)	BL	BL	BL	N/A	BL	BL	BL	BL	BL	N/A
Benzylbutyl phthalate(BBP)	BL	BL	BL	N/A	BL	BL	BL	BL	BL	N/A
Di-2-ethylhexyl phthalate(DEHP)	BL	BL	BL	N/A	BL	BL	BL	BL	BL	N/A
Diisobutyl phthalate(DIBP)	BL	BL	BL	N/A	BL	BL	BL	BL	BL	N/A

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(1) Screening Result

Tested Item(s)	Screening Result (mg/kg)	
	31	32
Lead (Pb)	BL	BL
Cadmium (Cd)	BL	BL
Mercury (Hg)	BL	BL
Total Chromium (Cr)	BL	BL
Total Bromine (PBBs & PBDEs)	BL	N/A
Dibutyl phthalate(DBP)	BL	N/A
Benzylbutyl phthalate(BBP)	BL	N/A
Di-2-ethylhexyl phthalate(DEHP)	BL	N/A
Diisobutyl phthalate(DIBP)	BL	N/A

(2) Test result for Chemical Confirmation

(a) The test result of Hexavalent Chromium (Cr(VI))

Testing item	Result (mg/kg)	
	12	17
Hexavalent Chromium (Cr(VI))	N.D	N.D

Remark: N.D. = Not Detected, MDL = Method Detection Limit
mg/kg = ppm = parts per million, 1000 mg/kg = 0.1%
IN= Inconclusive, Further chemical test, X = The range of needing to do further testing
N/A= Not applicable, BL = Below the screening limit
OL = Further chemical test will be conducted while the result is over the screening limit.
* = The screened result was found and further chemical test was suggested
When conducting the test for PBBs&PBDEs, XRF was introduced to screen Br exclusively, and then chemical screening was conducted if the XRF result is X.
When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.

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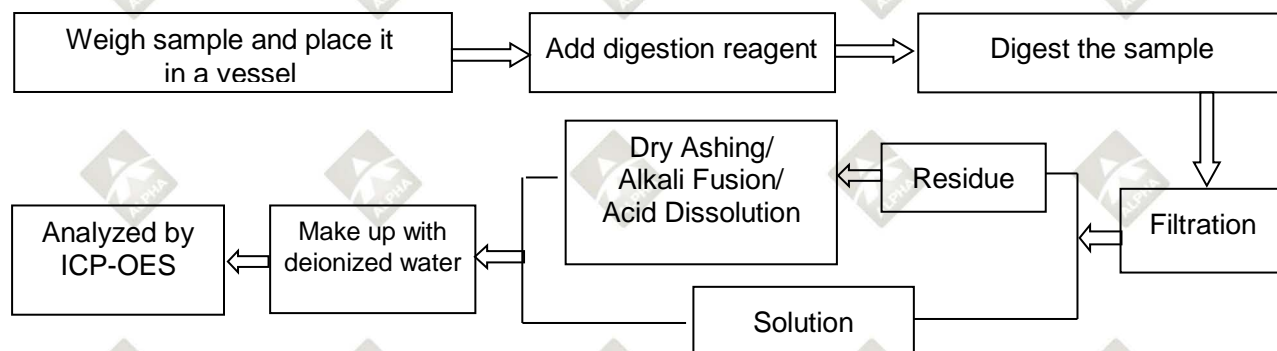
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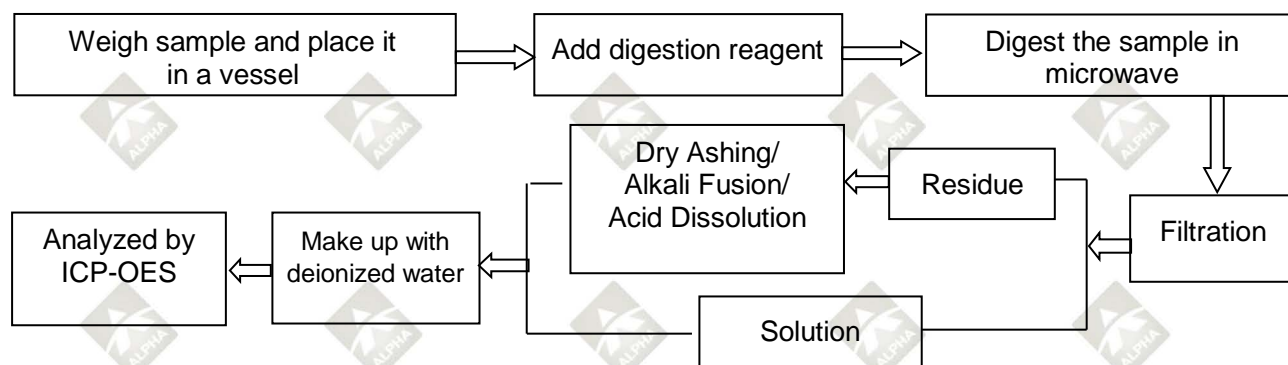
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Test Process

1. Lead(Pb), Cadmium(Cd), Chromium(Cr)

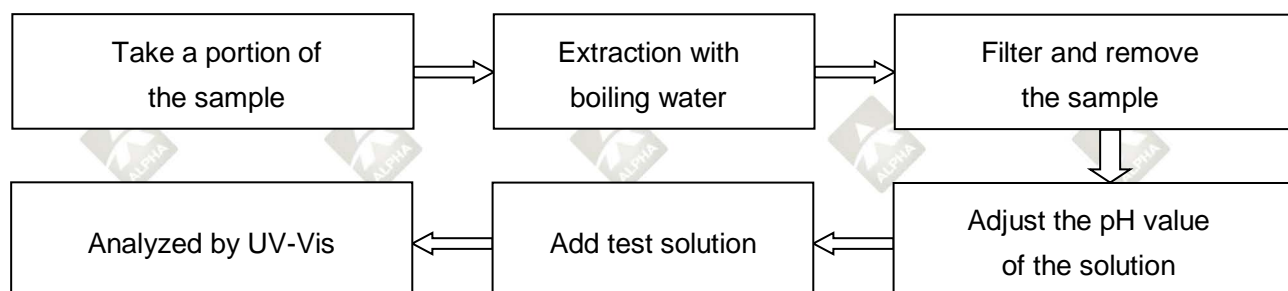


2. Mercury(Hg)



3. Hexavalent Chromium (Cr (VI))

(1) IEC 62321-7-1:2015
Plating/Metal sample(s)



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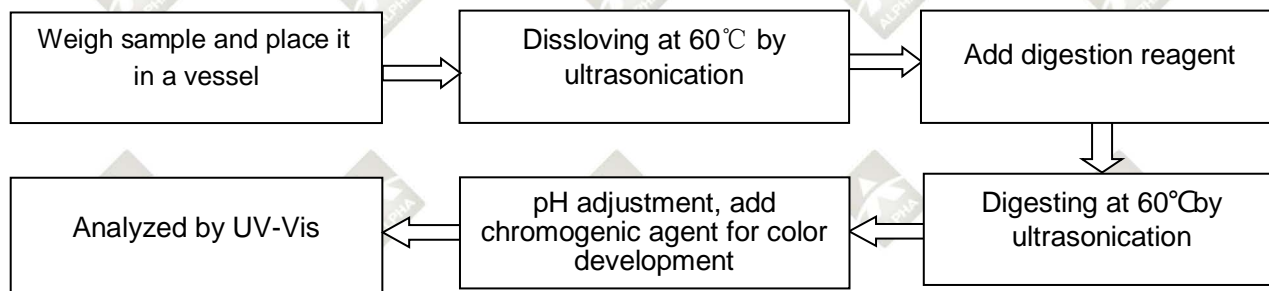
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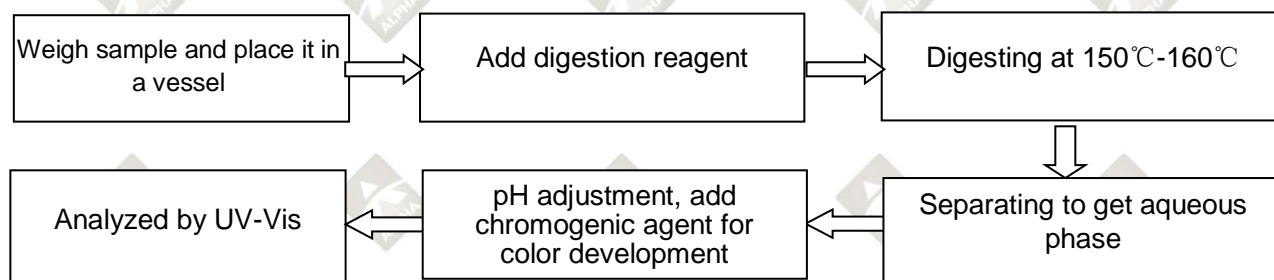
(2) IEC 62321-7-2:2017

Non-metal sample(s) (Material ABS/PC/PVC)

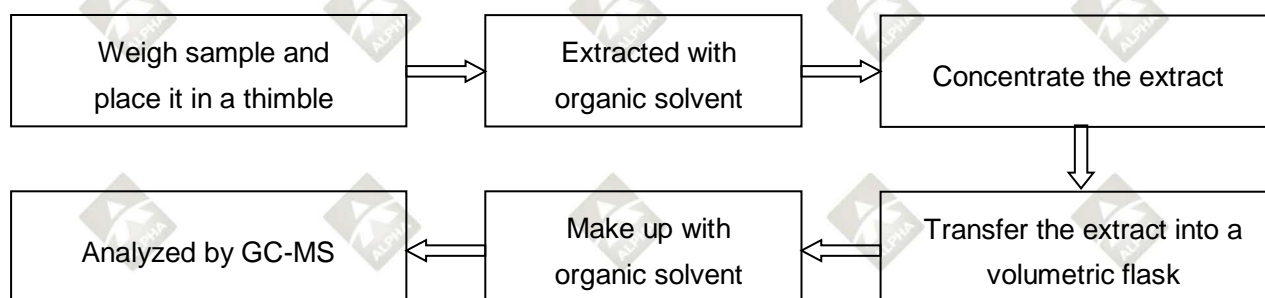


(3) IEC 62321-7-2:2017

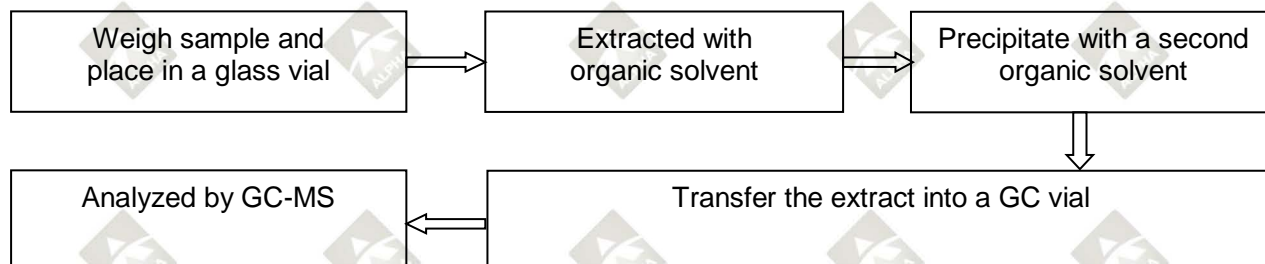
Non-metal sample(s) (Others)



4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



5. Phthalates(DBP/BBP/DEHP/DIBP)



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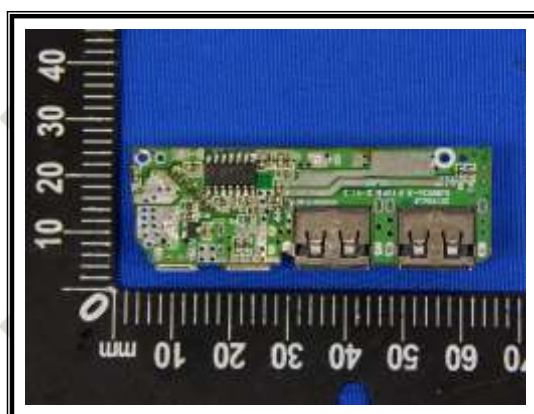
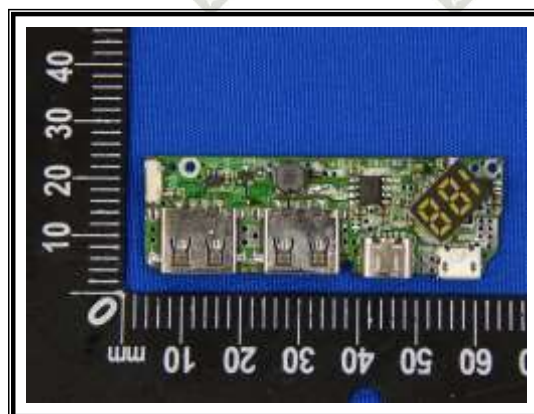


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Tested sample photo(s)



--- End of report ---

Statement:

1. The sample(s) and sample Information was/were provided by the client who should be responsible for the authenticity which ALPHA hasn't verified;
2. The result(s) shown in this report refer(s) only to the sample(s) tested;
3. Without written approval of ALPHA, this report can't be reproduced except in full.

Shenzhen Alpha Product Testing Co., Ltd.

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