



# Test Report

Date: Oct. 28, 2014

Report No.: CTL1410282598-R

**Applicant:** Shenzhen Bolutek Electronical Technology Co.,Ltd

**Address:** Building B, District A, Internet industry base, Baoan, Shenzhen, Guangdong, China

**Manufacturer:** Shenzhen Bolutek Electronical Technology Co.,Ltd

**Address:** Building B, District A, Internet industry base, Baoan, Shenzhen, Guangdong, China

The following sample(s) was/were submitted and identified on behalf of the clients as:

**Bluetooth Module**

**Model(s):** BC04-B

**Date of Sample Received** : Oct. 22, 2014

**Testing Period** : Oct. 22, 2014~ Oct. 28, 2014

**Test Requested** : Selected test(s) as requested by client.

**Test Method** : Please refer to next page(s).

**Test Results** : Please refer to next page(s).

**Conclusion** : Based on the performed tests on submitted samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC..

Tested by Kendy Wang

Approved by: Long Qi



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## A:RoHS Directive 2011/65/EU

- (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.  
(2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.  
(3)With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.  
(4)With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.  
(5)With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS. .

Test Item(s)	Unit	Limited(ppm)	Result A	Result B	MDL
Cadmium (Cd)	mg/kg	100	N.D.	N.D.	2
Lead (Pb)	mg/kg	1000	N.D.	N.D.	2
Mercury (Hg)	mg/kg	1000	N.D.	N.D.	2
Hexavalent Chromium (CrVI) byAlkaline extraction	mg/kg	-	N.D.	N.D.	2
Sum of PBBs	mg/kg	1000	N.D.	N.D.	-
Monobromobiphenyl	mg/kg	-	N.D.	N.D.	5
Dibromobiphenyl	mg/kg	-	N.D.	N.D.	5
Tribromobiphenyl	mg/kg	-	N.D.	N.D.	5
Pentabromobiphenyl	mg/kg	-	N.D.	N.D.	5
Hexabromobiphenyl	mg/kg	-	N.D.	N.D.	5
Heptabromobiphenyl	mg/kg	-	N.D.	N.D.	5
Octabromobiphenyl	mg/kg	-	N.D.	N.D.	5
Nonabromobiphenyl	mg/kg	-	N.D.	N.D.	5
Decabromobiphenyl	mg/kg	-	N.D.	N.D.	5
Sum of PBDEs	mg/kg	1000	N.D.	N.D.	-
Monobromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Dibromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Tribromobiphenyl ethe ether	mg/kg	-	N.D.	N.D.	5
Pentabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Hexabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Heptabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Octabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Nonabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Decabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Pentabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5



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Test Item(s)	Unit	Limited(ppm)	Result C	Result D	MDL
Cadmium (Cd)	mg/kg	100	N.D.	N.D.	2
Lead (Pb)	mg/kg	1000	N.D.	N.D.	2
Mercury (Hg)	mg/kg	1000	N.D.	N.D.	2
Hexavalent Chromium (CrVI) by Alkaline extraction	mg/kg	-	N.D.	N.D.	2
Sum of PBBs	mg/kg	1000	N.D.	N.D.	-
Monobromobiphenyl	mg/kg	-	N.D.	N.D.	5
Dibromobiphenyl	mg/kg	-	N.D.	N.D.	5
Tribromobiphenyl	mg/kg	-	N.D.	N.D.	5
Pentabromobiphenyl	mg/kg	-	N.D.	N.D.	5
Hexabromobiphenyl	mg/kg	-	N.D.	N.D.	5
Heptabromobiphenyl	mg/kg	-	N.D.	N.D.	5
Octabromobiphenyl	mg/kg	-	N.D.	N.D.	5
Nonabromobiphenyl	mg/kg	-	N.D.	N.D.	5
Decabromobiphenyl	mg/kg	-	N.D.	N.D.	5
Sum of PBDEs	mg/kg	1000	N.D.	N.D.	-
Monobromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Dibromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Tribromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Pentabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Hexabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Heptabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Octabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Nonabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Decabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5
Pentabromobiphenyl ether	mg/kg	-	N.D.	N.D.	5



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Test Item(s)	Unit	Limited(ppm)	Result E	MDL
Cadmium (Cd)	mg/kg	100	N.D.	2
Lead (Pb)	mg/kg	1000	N.D.	2
Mercury (Hg)	mg/kg	1000	N.D.	2
Hexavalent Chromium (CrVI) by Alkaline extraction	mg/kg	-	N.D.	2
Sum of PBBs	mg/kg	1000	N.D.	-
Monobromobiphenyl	mg/kg	-	N.D.	5
Dibromobiphenyl	mg/kg	-	N.D.	5
Tribromobiphenyl	mg/kg	-	N.D.	5
Pentabromobiphenyl	mg/kg	-	N.D.	5
Hexabromobiphenyl	mg/kg	-	N.D.	5
Heptabromobiphenyl	mg/kg	-	N.D.	5
Octabromobiphenyl	mg/kg	-	N.D.	5
Nonabromobiphenyl	mg/kg	-	N.D.	5
Decabromobiphenyl	mg/kg	-	N.D.	5
Sum of PBDEs	mg/kg	1000	N.D.	-
Monobromobiphenyl ether	mg/kg	-	N.D.	5
Dibromobiphenyl ether	mg/kg	-	N.D.	5
Tribromobiphenyl ether	mg/kg	-	N.D.	5
Pentabromobiphenyl ether	mg/kg	-	N.D.	5
Hexabromobiphenyl ether	mg/kg	-	N.D.	5
Heptabromobiphenyl ether	mg/kg	-	N.D.	5
Octabromobiphenyl ether	mg/kg	-	N.D.	5
Nonabromobiphenyl ether	mg/kg	-	N.D.	5
Decabromobiphenyl ether	mg/kg	-	N.D.	5
Pentabromobiphenyl ether	mg/kg	-	N.D.	5





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## B:Hexabromocyclododecane (HBCDD)

Test Method : Determination of HBCDD by GC-MS based on IEC 62321:2008.

Test Item(s)	Unit	MDL	Result.A	Result.B	Result.C	Result.D	Result.E
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND	ND	ND	ND	ND

Notes :

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC:

Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

## C:Phthalate

Test Method : Determination of phthalates by GC-MS based on EN 14372:2004.

Test Item(s)	Unit	MDL	Result A	Result B	Result C
Dibutyl Phthalate (DBP)	% (w/w)	0.003	ND	ND	ND
Benzylbutyl Phthalate (BBP)	% (w/w)	0.003	ND	ND	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	% (w/w)	0.003	ND	ND	ND

Test Item(s)	Unit	MDL	Result D	Result E
Dibutyl Phthalate (DBP)	% (w/w)	0.003	ND	ND
Benzylbutyl Phthalate (BBP)	% (w/w)	0.003	ND	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	% (w/w)	0.003	ND	ND



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## Notes :

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC:  
Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP) and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.

Description for specimen A : Green PCB

Description for specimen B : IC

Description for specimen C : Crystal

Description for specimen D : Resistance

Description for specimen E : Capacitance

## Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL )
- (4) "-" = Not Regulated





# Test Report

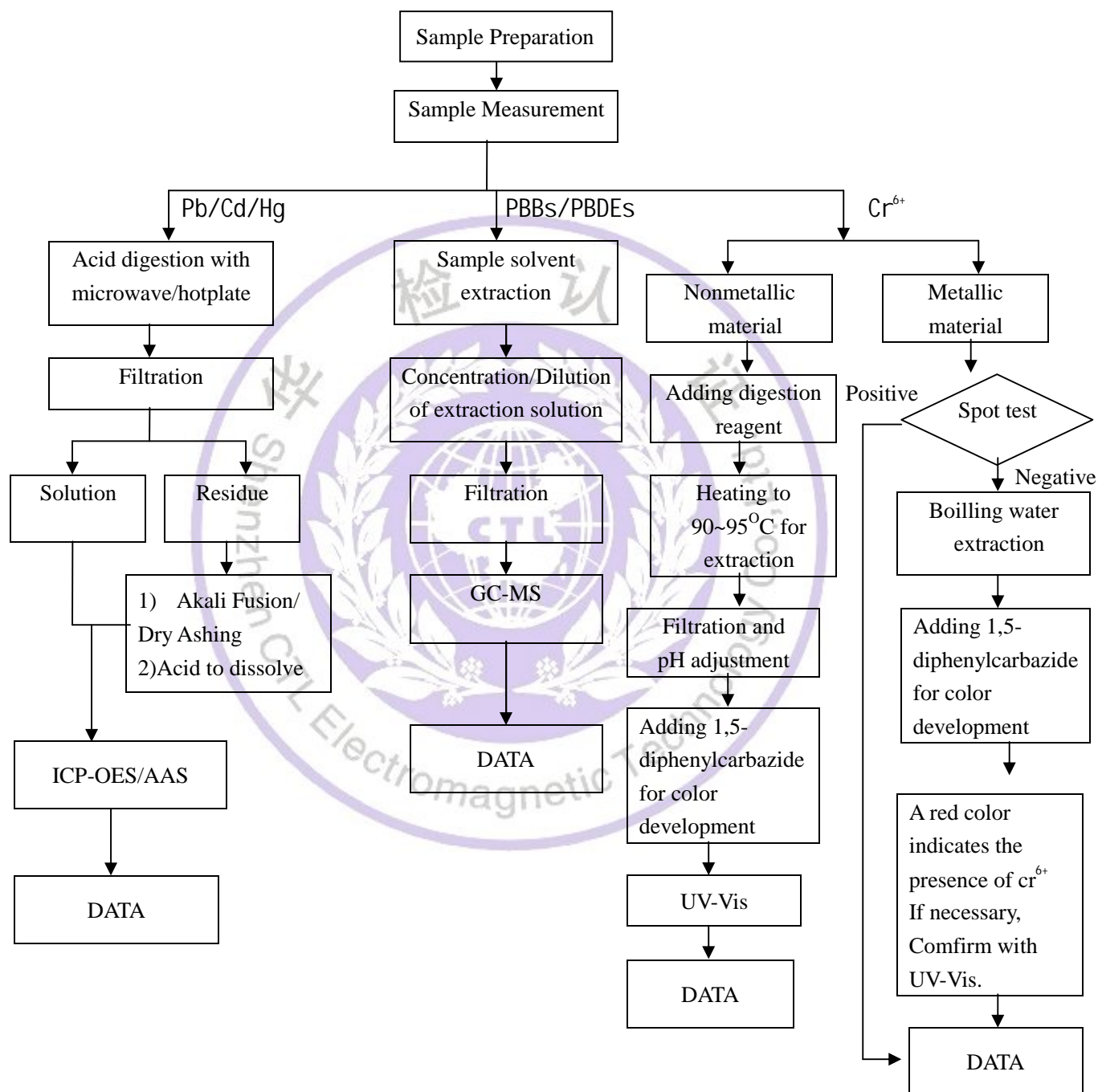
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## ATTACHMENTS

### RoHS Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning methos according to below flow chart(Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).



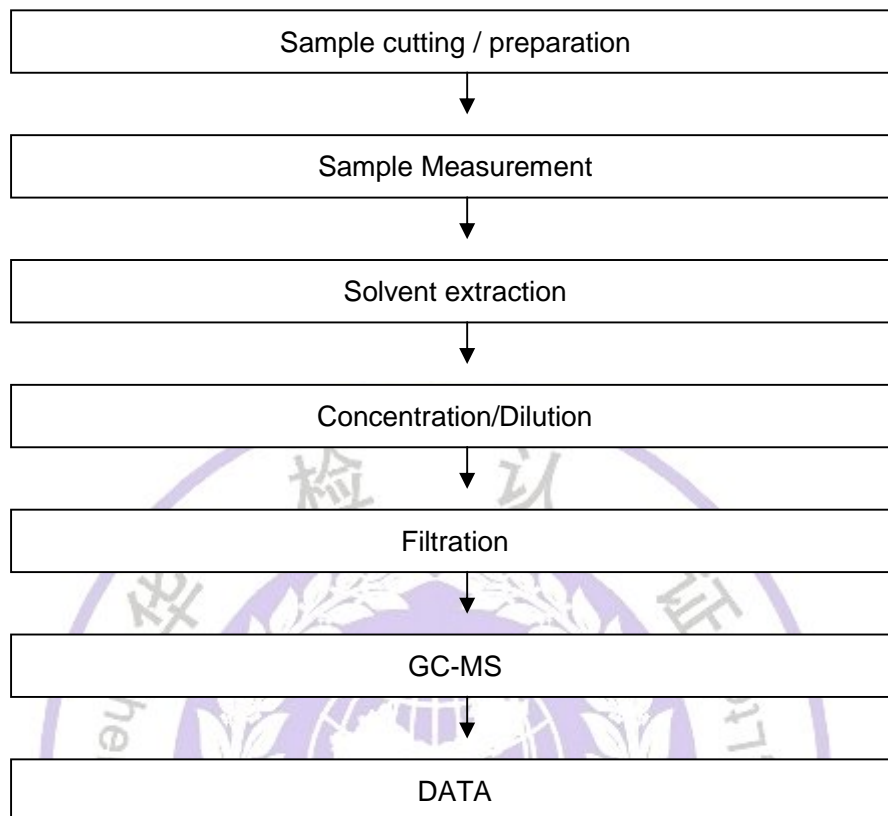


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## HBCDD Testing Flow Chart





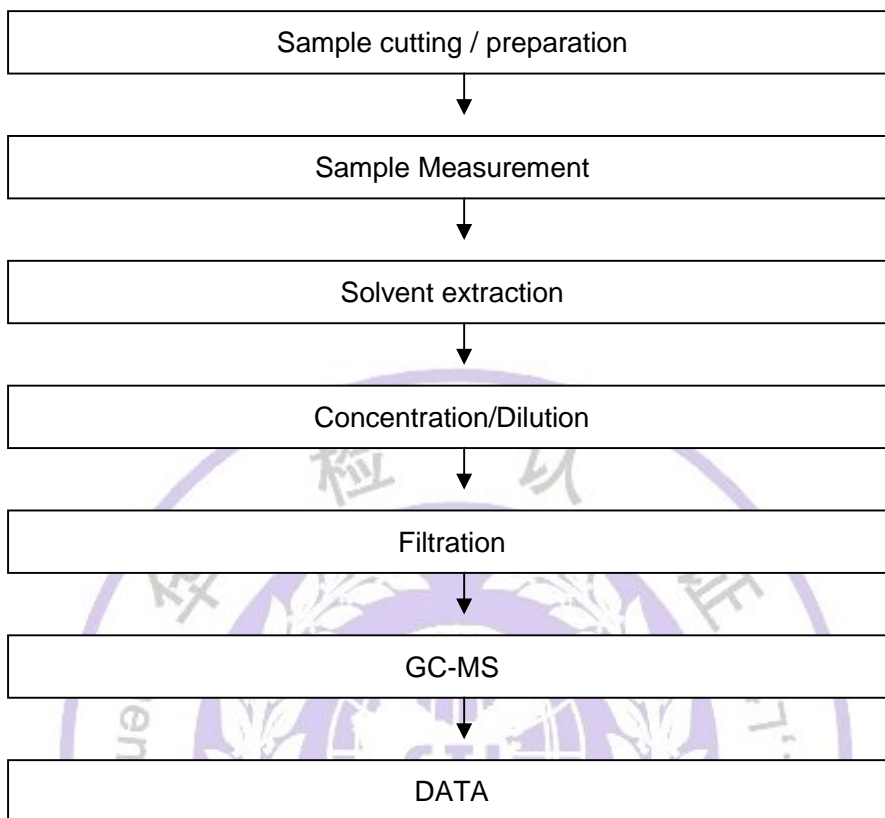


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## Phthalates Testing Flow Chart



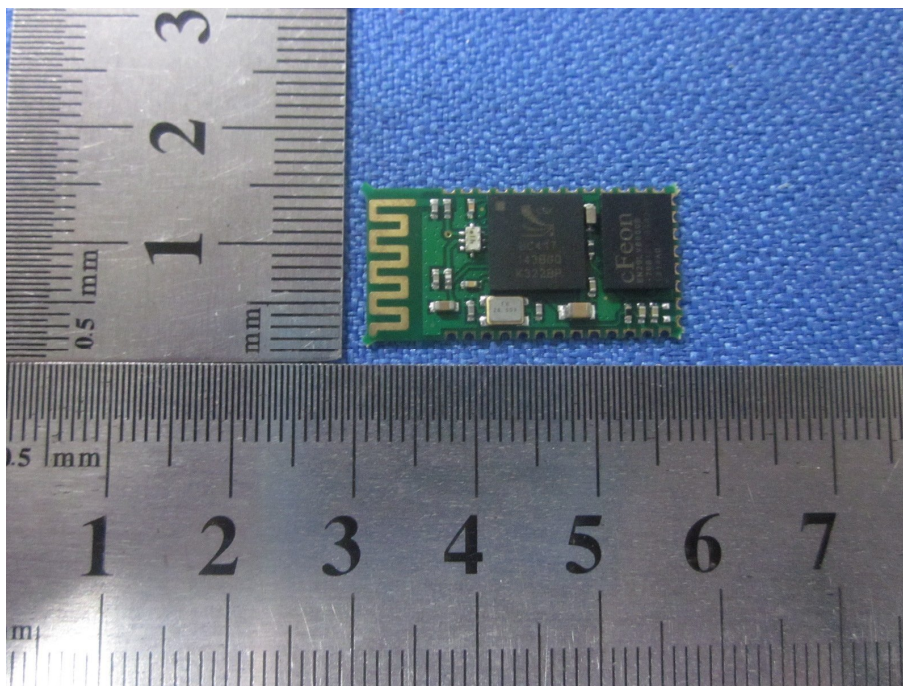


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Sample photo:



\*\*\*End of Report\*\*\*

