

VZ067TH7 SERIES Pb(F) TEST REPORT

PART NAME	REPORT No.
SUBSTRATE	ICP0029
ELECTRODE *	ICP0261
RESISTANCE ELEMENT	ICP0282
TERMINAL CONNECTOR	ICP1334/ICP1067
KNOB	ICP0449
1-3 TERMINALS	ICP1133
2.TERMINAL	ICP1133
MOVING CONTACT	ICP1136

*Lead is a glass ingredient.(Lead contained in the glass
of electronic components is exempt from RoHS directives.)

Test Report

No. CANEC1606725119

Date: 28 Apr 2016

Page 1 of 5

HOKURIKU ELECTRIC INDUSTRY CO., LTD.

3158 Shimo-okubo, Toyama City, Toyama Pref. Japan

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

SGS Job No. : CP16-022348 - GZ

Lot No. : 160310

Client Ref. Info. : AI2O3 96%

Supplier :

Date of Sample Received : 20 Apr 2016

Testing Period : 20 Apr 2016 - 26 Apr 2016

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 sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) do not exceed the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Echo

Echo Yeung

Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN16-067251.017	White sheet

Remarks :

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

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

- Test Method :
- (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 62321-6:2015, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	017
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND



SGS-CTC Standards Technical Service Co., Ltd.
Guangzhou Branch

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Test Item(s)	Limit	Unit	MDL	017
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) On 4 June 2015, Commission Directive (EU) 2015/863 was published in the Official Journal of the European Union (OJEU) to include the phthalates BBP, DBP, DEHP and DIBP into ANNEX II of the Rohs Recast Directive. The new law restricts each phthalate to no more than 0.1% in each homogeneous material of an electrical product.
- (3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.
- (4) The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.
- (5) The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.'



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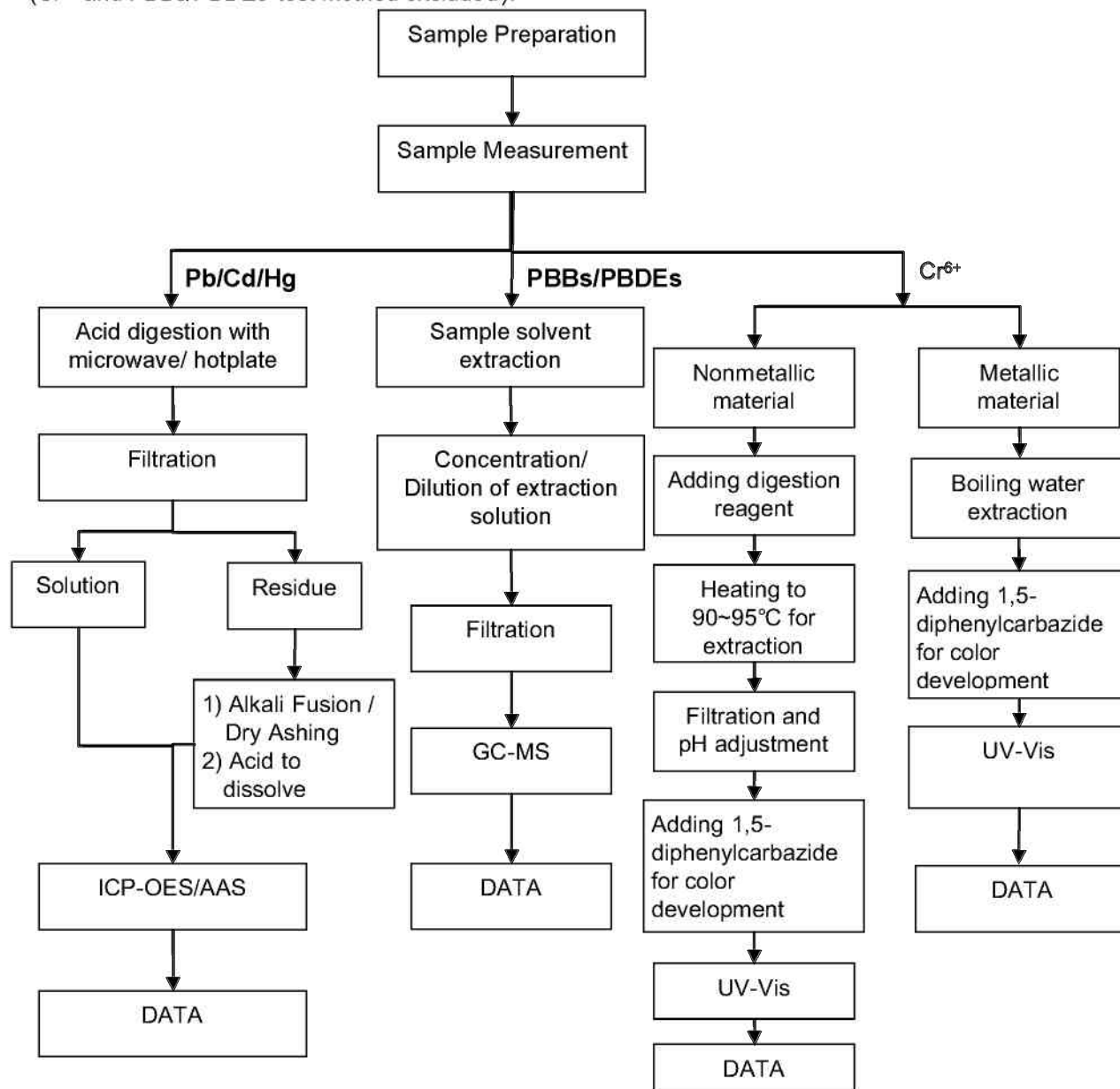
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ATTACHMENTS

Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) Name of the person who made testing: Bruce Xiao / Sunny Hu
- 2) Name of the person in charge of testing: Bella Wang / Cutey Yu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr⁶⁺ and PBBs/PBDEs test method excluded).



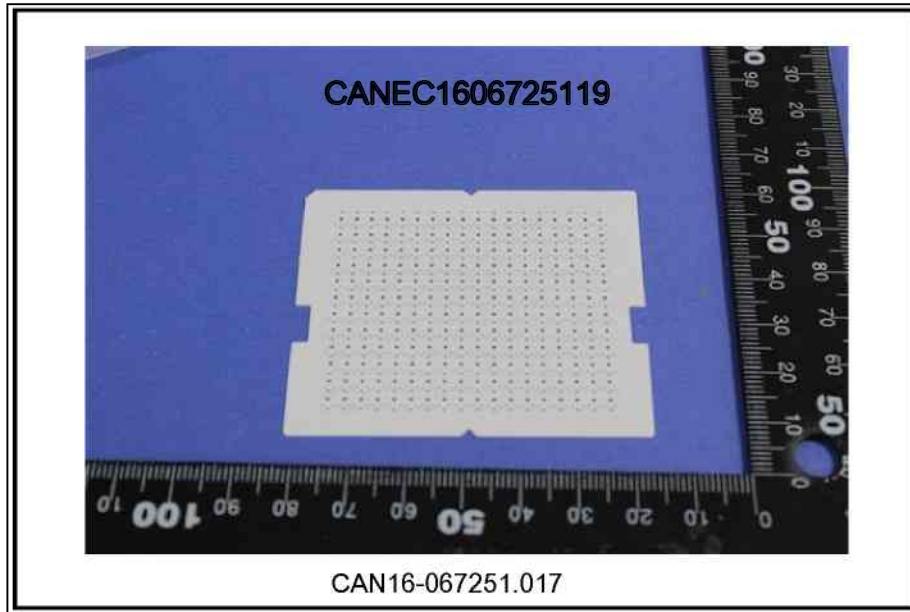
Test Report

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

Test Report

Report No. SCL011010665002

Page 1 of 4

Applicant HOKURIKU ELECTRIC(GUANG DONG) CO., LTD.

Address JIAO-SHE ZONE,DONG KENG TOWN,DONG GUAN

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

Sample Name ELECTRODE
Lot No. 500-252-10
Material Ag ELEMENT
Supplier
Sample Received Date Feb. 23, 2016
Testing Period Feb. 23, 2016 to Mar. 3, 2016

Test Requested As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyl(PBBs), Polybrominated Diphenyl Ethers(PBDEs) in the submitted sample(s).

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Mercury (Hg)	IEC 62321-4:2013 Ed.1.0	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
Polybrominated Biphenyl(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321-6:2015	GC-MS

Test Result(s) Please refer to the following page(s).



Tang Gong

Danny Liu

Danny Liu
Technical Manager

Reviewed by

Cathy Huang

Date

Mar. 3, 2016

No. R185011352

Centre Testing International Group Co., Ltd.

Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China

Test Report

Report No. SCL011010665002

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Test Result(s)

Tested Item(s)	Result	MDL
Lead (Pb)	1132 mg/kg	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	2 mg/kg

Tested Item(s)	Result	MDL
Polybrominated Biphenyl(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers(PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Tested Sample/Part Description Gray-green paste

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

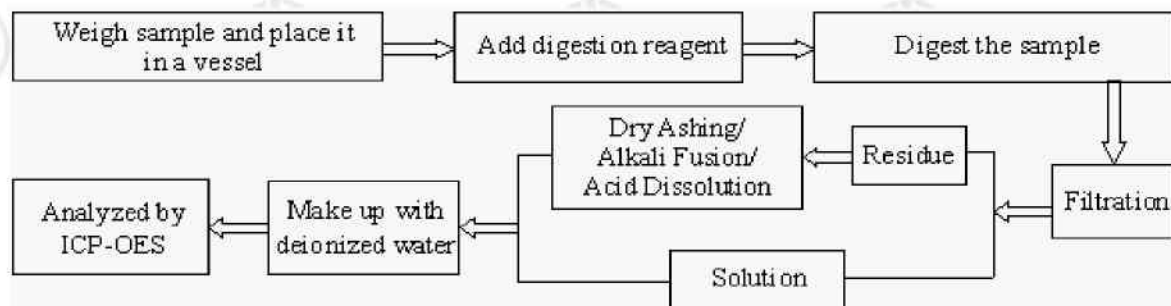
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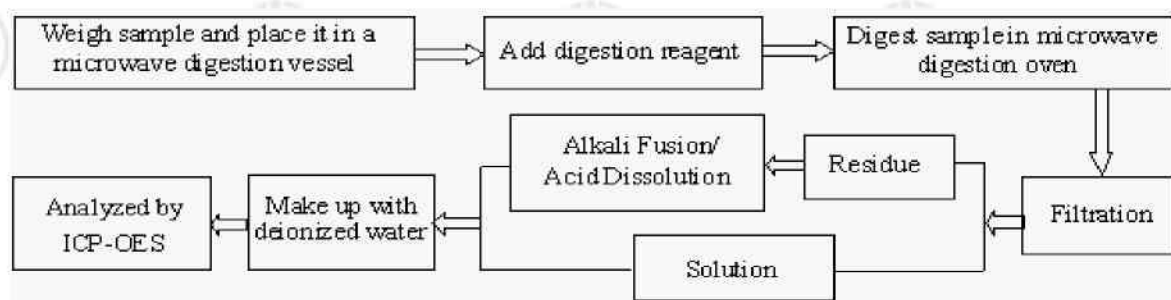
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Test Process

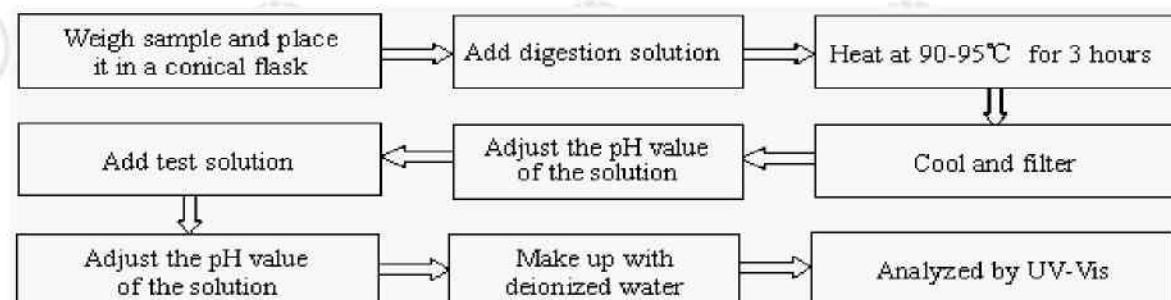
1. Lead (Pb), Cadmium (Cd)



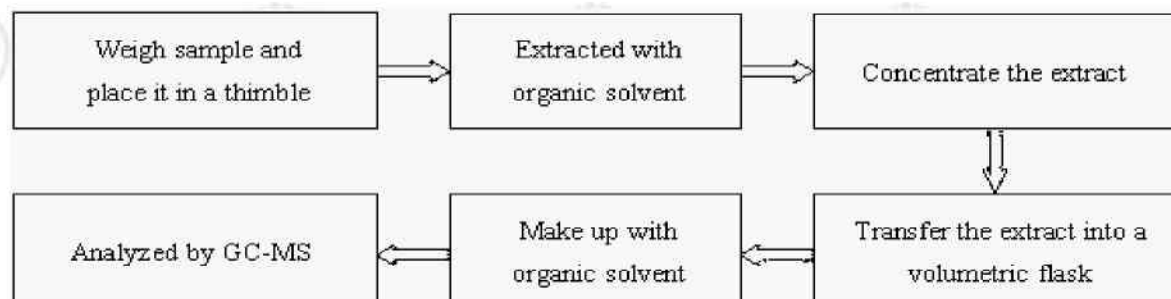
2. Mercury (Hg)



3. Hexavalent Chromium(Cr(VI))



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



Test Report

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Photo(s) of the sample(s)



*** End of report ***

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Test Report

No. CANEC1514075204

Date: 18 Aug 2015

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HOKURIKU ELETRIC(GUANG DONG) CO., LTD.
JIAO-SHE ZONE,DONGKENG TOWN,DONGGUAN
CHINA

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

SGS Job No. : CP15-045902 - GZ
Lot No. : KC-35
Material Name : CARBON RESISTANCE
Supplier :
Date of Sample Received : 12 Aug 2015
Testing Period : 12 Aug 2015 - 17 Aug 2015
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 sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Yan Lee
Approved Signatory



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Test Report

No. CANEC1514075204

Date: 18 Aug 2015

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN15-140752.004	Black material

Remarks :

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

RoHS Directive 2011/65/EU

- Test Method :
- (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 62321-6:2015, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	004
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	5	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	5	ND
Monobromodiphenyl ether	-	mg/kg	5	ND



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Date: 18 Aug 2015

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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>004</u>
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

- (1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II.



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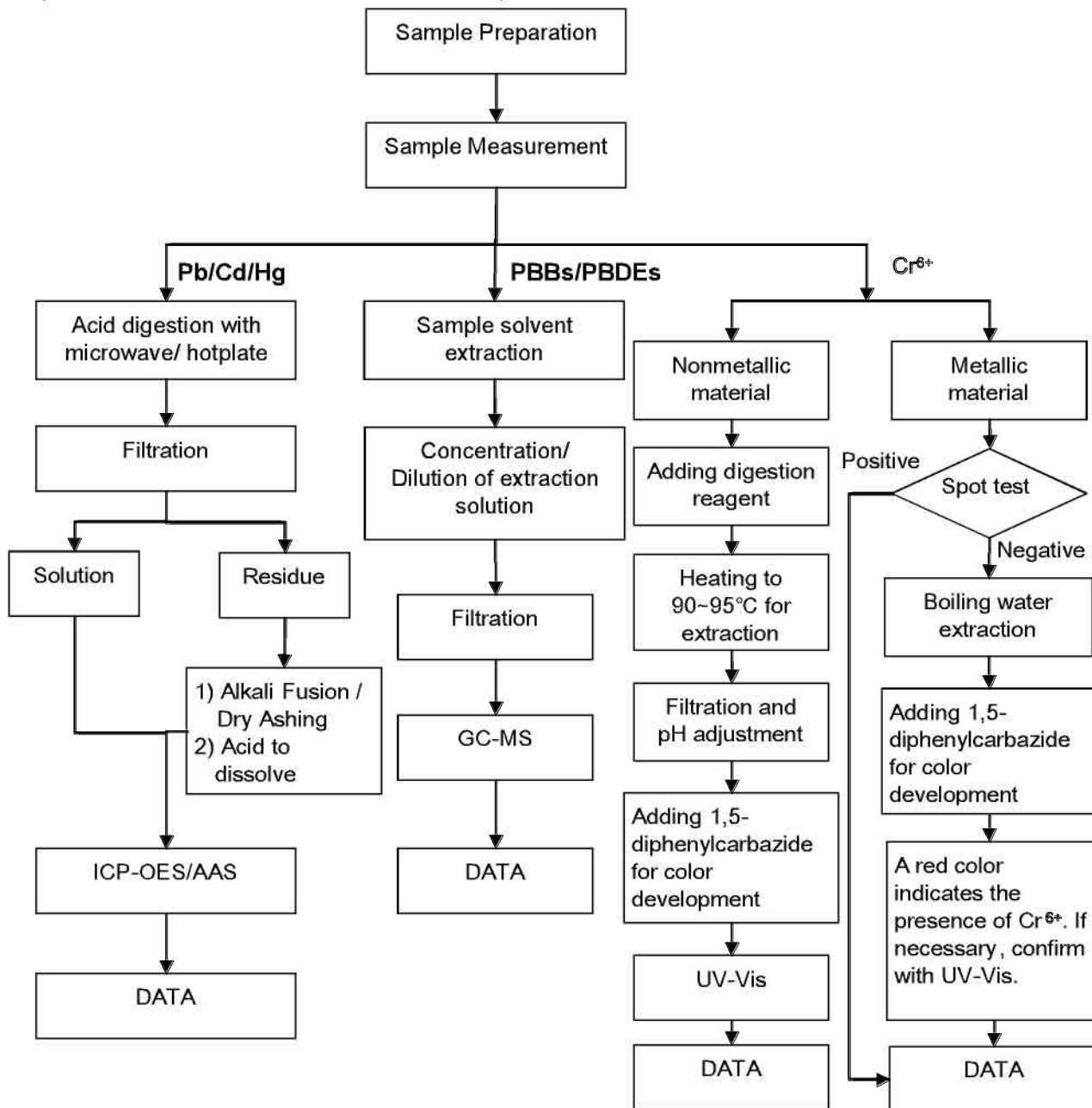
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ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bruce Xiao / Sunny Hu
- 2) Name of the person in charge of testing: Bella Wang / Cutey Yu
- 3) These samples were dissolved totally by pre -conditioning method according to below flow chart (Cr⁶⁺ and PBBs/PBDEs test method excluded).



Test Report

No. CANEC1514075204

Date: 18 Aug 2015

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

Test Report

Report No. SCL01H080992003

Page 1 of 4

Applicant HOKURIKU ELETRIC(GUANG DONG)CO.,LTD

Address JIAO-SHE ZONE,GONG KENG TOWN,DONG GUAN

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

Sample Name TERMINAL CONNECTOR

Material Sn-3Ag-0.5Cu

Supplier

Sample Received Date Sep. 17, 2015

Testing Period Sep. 17, 2015 to Sep. 21, 2015

Test Requested As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyl(PBBs), Polybrominated Diphenyl Ethers(PBDEs) in the submitted sample(s).

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Mercury (Hg)	IEC 62321-4:2013 Ed.1.0	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
Polybrominated Biphenyl(PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS

Test Result(s) Please refer to the following page(s).



Linas

Danny Liu

Danny Liu

Technical Manager

Centre Testing International Group Co., Ltd.

Reviewed by

Cathy

Date

Sep. 21, 2015

No. R185011409

Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China

Test Report

Report No. SCL01H080992003

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Test Result(s)

Tested Item(s)	Result	MDL
Lead (Pb)	122 mg/kg	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	2 mg/kg

Tested Item(s)	Result	MDL
Polybrominated Biphenyl(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers(PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Tested Sample/Part Description Gray-green paste

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

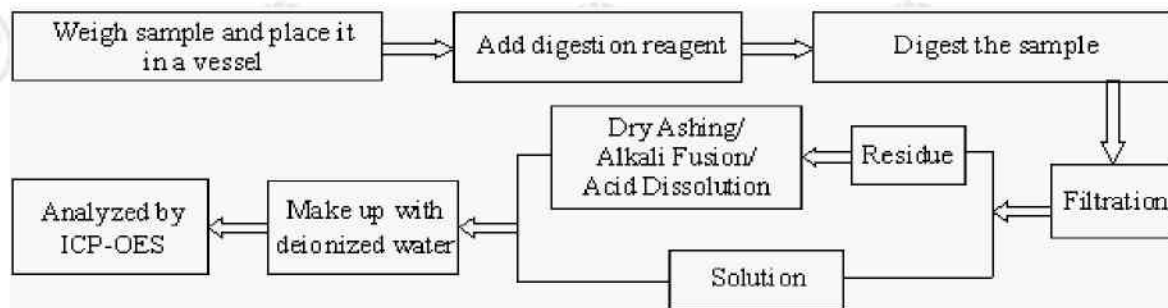
Test Report

Report No. SCL01H080992003

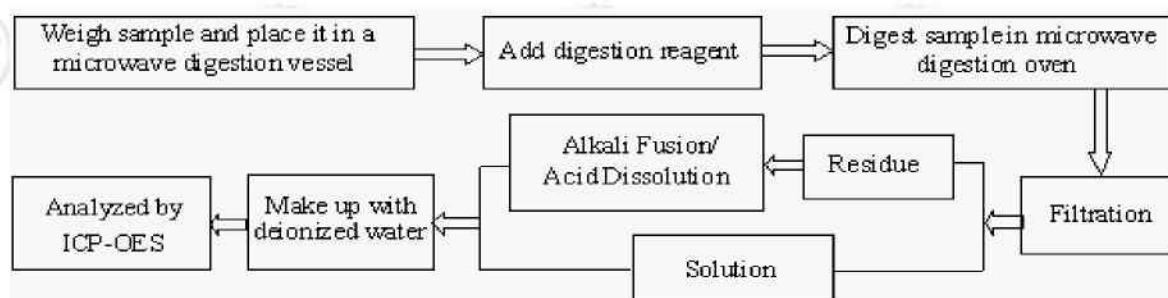
Page 3 of 4

Test Process

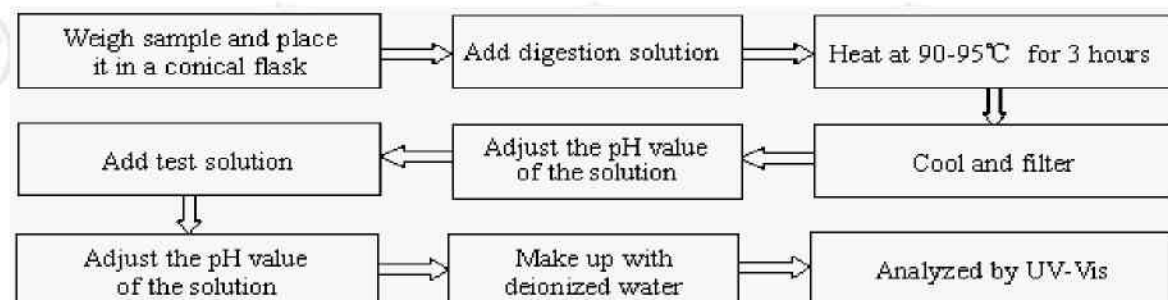
1. Lead (Pb), Cadmium (Cd)



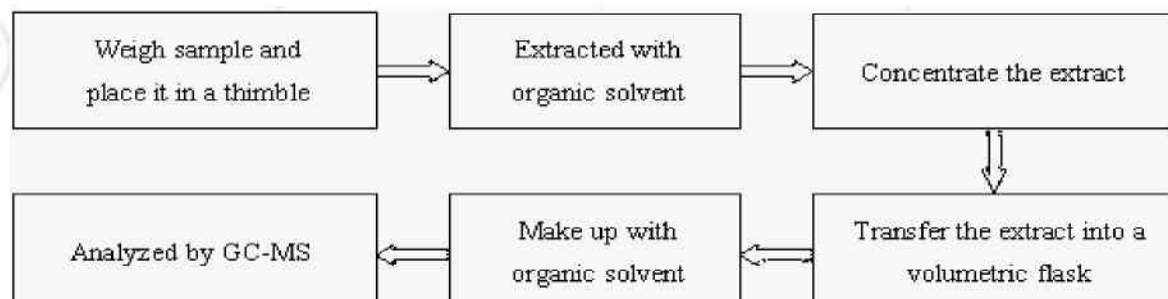
2. Mercury (Hg)



3. Hexavalent Chromium(Cr(VI))



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



Test Report

Report No. SCL01H080992003

Page 4 of 4

Photo(s) of the sample(s)



*** End of report ***

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Test Report

Report No. SCL01H070806001

Page 1 of 4

Applicant HOKURIKU ELECTRIC(GUANG DONG) CO., LTD.

Address JIAO-SHE ZONE,DONG KENG TOWN,DONG GUAN

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

Sample Name TERMINAL CONNECTOR

Lot No. 14-4A27HZG4

Material Sn-3Ag-0.5Cu

Supplier

Sample Received Date Aug. 17, 2015

Testing Period Aug. 17, 2015 to Aug. 19, 2015

Test Requested As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyl(PBBs), Polybrominated Diphenyl Ethers(PBDEs) in the submitted sample(s).

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Mercury (Hg)	IEC 62321-4:2013 Ed.1.0	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
Polybrominated Biphenyl(PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS

Test Result(s) Please refer to the following page(s).



Fancy

Danny Liu

Danny Liu
Technical Manager

Reviewed by

Danna

Date

Aug. 19, 2015

No. R185011509

Centre Testing International Group Co., Ltd.

Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China

Test Report

Report No. SCL01H070806001

Page 2 of 4

Test Result(s)

Tested Item(s)	Result	MDL
Lead (Pb)	68 mg/kg	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	2 mg/kg

Tested Item(s)	Result	MDL
Polybrominated Biphenyl(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers(PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Tested Sample/Part Description Gray paste

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

- MDL = Method Detection Limit

- N.D. = Not Detected (<MDL)

- mg/kg = ppm = parts per million

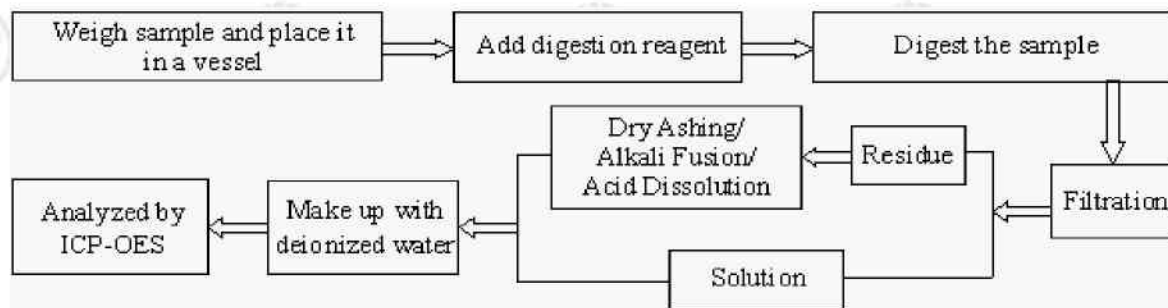
Test Report

Report No. SCL01H070806001

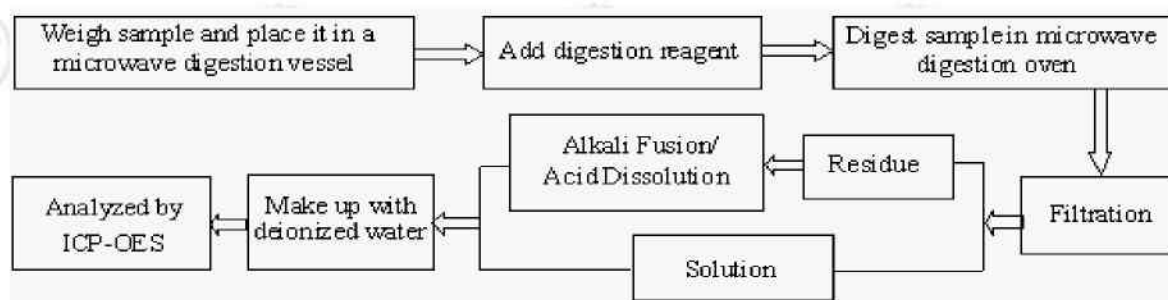
Page 3 of 4

Test Process

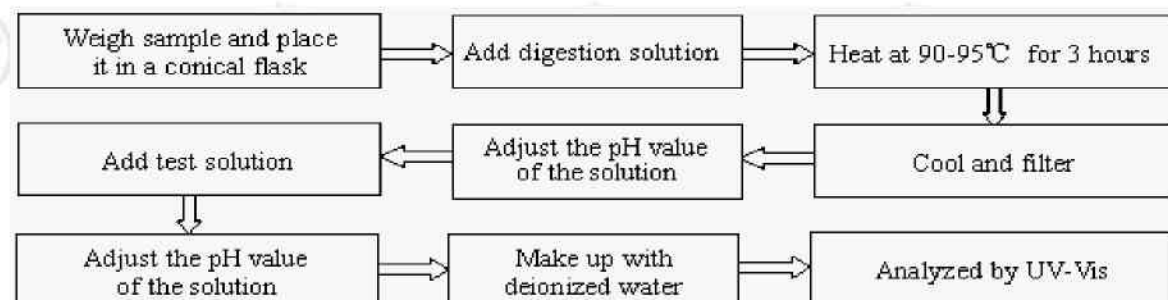
1. Lead (Pb), Cadmium (Cd)



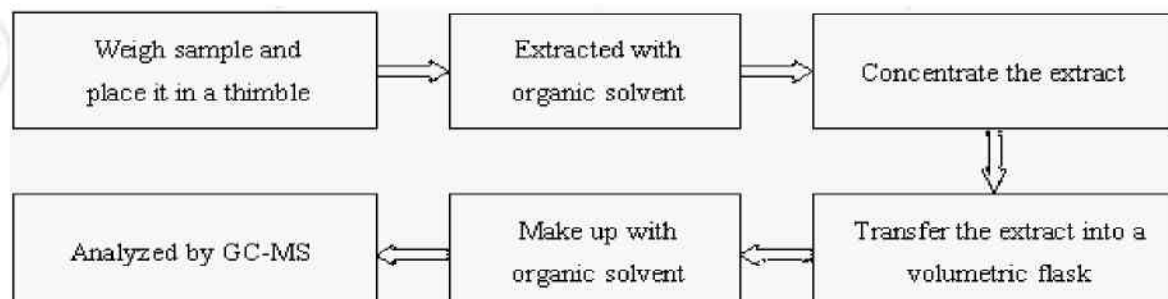
2. Mercury (Hg)



3. Hexavalent Chromium(Cr(VI))



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



Test Report

Report No. SCL01H070806001

Page 4 of 4

Photo(s) of the sample(s)



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检测报告(Test Report)

检测报告编号(Report No.): SZC16012081311-1

日期(Date): 2016/1/23

页数(Page): 1 of 5

委托单位:

Applicant:

单位地址:

Address:

样品信息(Sample information)

样品名称(Sample Name): 旋钮
样品描述(Sample Description): 米色塑胶(Cream plastic)
样品型号(Sample Model):
样品材质(Sample Material): PA6
买家(Buyer):
供应商(Supplier):
样品编号(Sample No.): SL1601208131101
委托日期(Sample Received Date): 2016/1/20
检测日期(Testing Period): 2016/1/20 - 2016/1/23

检测要求(Test Requested):

根据客户要求, 检测其送检样品中的铅、镉、汞、六价铬、多溴联苯、多溴二苯醚的含量(As specified by client, to determine the Pb, Cd, Hg, Cr(VI), PBBs, PBDEs content in the submitted sample.).

检测方法(Test Method):

请参见后续页(Please refer to following page(s)).

检测结果(Test Result):

请参见后续页(Please refer to following page(s)).

结论(Conclusion):

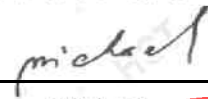
基于所送样品进行的检测, 铅、镉、汞、六价铬、多溴联苯、多溴二苯醚的检测结果显示符合欧盟 RoHS 指令 2011/65/EU 及其修订指令 EU 2015/863 的限值要求(Based on the performed tests on submitted samples, the results of Pb, Cd, Hg, Cr(VI), PBBs, PBDEs comply with the limits as set by EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863.).

审核人
Checked by



Angela

授权签字人
Signed for and on behalf of HCT



Michael
实验室经理
Laboratory Manager





检测报告(Test Report)

检测报告编号(Report No.): SZC16012081311-1

日期(Date): 2016/1/23

页数(Page): 2 of 5

检测结果(Test Results):

单位(Unit): mg/kg

检测项目 (Test Items)	检测方法/仪器 (Test Method/ Equipment)	方法检出限 (MDL)	含量 (Content)	EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863
铅 Lead(Pb)	参考(Refer to) IEC62321-5:2013. ICP-AES/AAS	2	N.D.	1000
镉 Cadmium(Cd)		2	N.D.	100
汞 Mercury(Hg)	参考(Refer to) IEC62321-4:2013. ICP-AES	2	N.D.	1000
六价铬 Hexavalent Chromium(Cr(VI)) 通过碱液萃取 by Alkaline extraction	参考(Refer to) IEC 62321:2008. UV-VIS	2	N.D.	1000
一溴联苯 Mono-bromobiphenyl	参考(Refer to) IEC 62321:2008. GC-MS	5	N.D.	—
二溴联苯 Di-bromobiphenyl		5	N.D.	
三溴联苯 Tri-bromobiphenyl		5	N.D.	
四溴联苯 Tetra-bromobiphenyl		5	N.D.	
五溴联苯 Penta-bromobiphenyl		5	N.D.	
六溴联苯 Hexa-bromobiphenyl		5	N.D.	
七溴联苯 Hepta-bromobiphenyl		5	N.D.	
八溴联苯 Octa-bromobiphenyl		5	N.D.	
九溴联苯 Nona-bromobiphenyl		5	N.D.	
十溴联苯 Deca-bromobiphenyl		5	N.D.	
多溴联苯 Polybrominated Biphenyls(PBBs)	参考(Refer to) IEC 62321:2008. GC-MS	—	N.D.	1000
一溴二苯醚 Mono-bromodiphenyl ether	参考(Refer to) IEC 62321:2008. GC-MS	5	N.D.	—
二溴二苯醚 Di-bromodiphenyl ether		5	N.D.	
三溴二苯醚 Tri-bromodiphenyl ether		5	N.D.	
四溴二苯醚 Tetra-bromodiphenyl ether		5	N.D.	
五溴二苯醚 Penta-bromodiphenyl ether		5	N.D.	
六溴二苯醚 Hexa-bromodiphenyl ether		5	N.D.	
七溴二苯醚 Hepta-bromodiphenyl ether		5	N.D.	
八溴二苯醚 Octa-bromodiphenyl ether		5	N.D.	
九溴二苯醚 Nona-bromodiphenyl ether		5	N.D.	
十溴二苯醚 Deca-bromodiphenyl ether		5	N.D.	
多溴二苯醚 Polybrominated Diphenyl Ethers(PBDEs)		—	N.D.	1000

备注(Note): MDL=Method Detection Limit 方法检出限

mg/kg = ppm=parts per million, “—”=Not regulated 无规定

N.D.=Not Detected(less than method detection limit), 未检出(小于方法检出限)



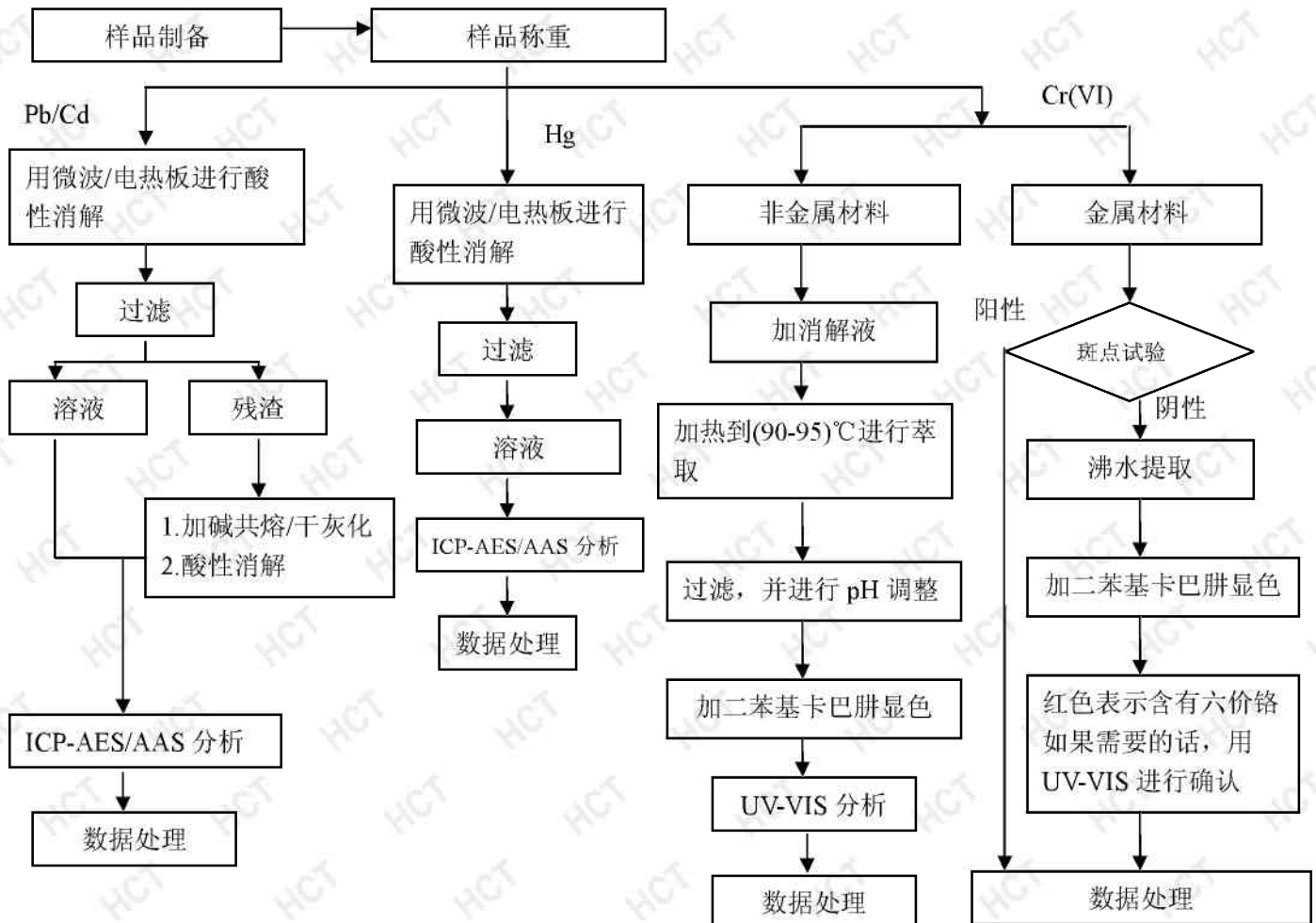
检测报告(Test Report)

检测报告编号(Report No.): SZC16012081311-1

日期(Date): 2016/1/23

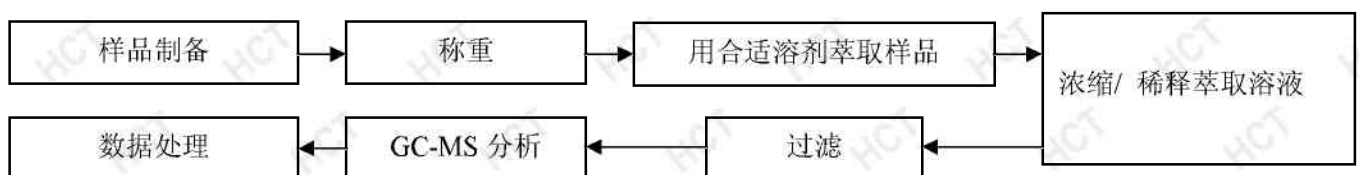
页数(Page): 3 of 5

检测流程图



根据以上的流程图之条件, 样品已经完全溶解(六价铬检测方法除外)。

PBBs/PBDEs



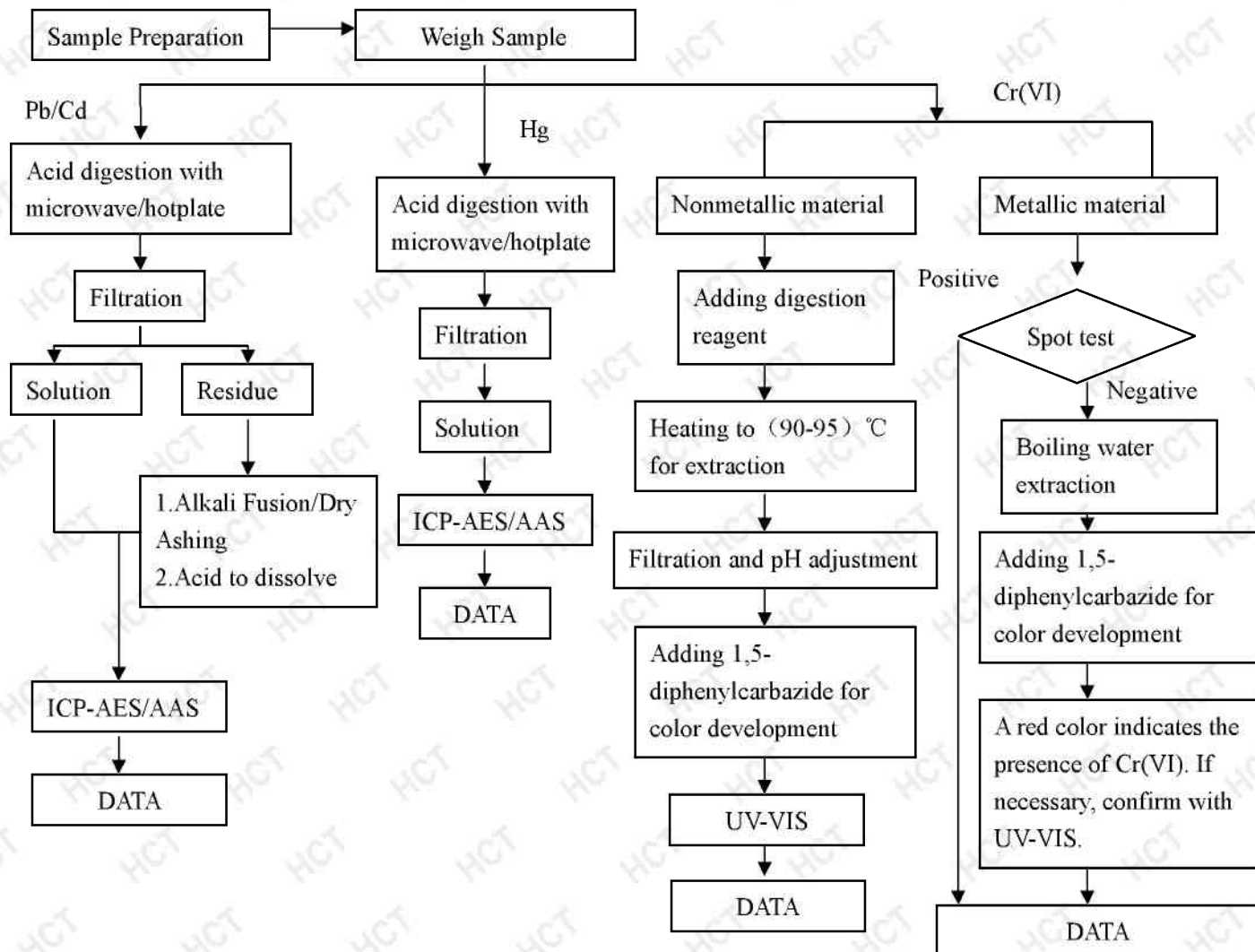
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日期(Date): 2016/1/23

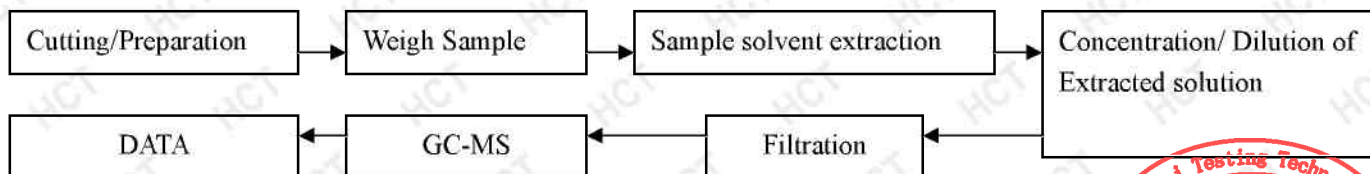
页数(Page): 4 of 5

Test Flow Chart



These sample were dissolved totally by pre-conditioning method according to above flow chart (Cr(VI) test method excluded)

PBBs/PBDEs



检测报告(Test Report)

检测报告编号(Report No.): SZC16012081311-1

日期(Date): 2016/1/23

页数(Page): 5 of 5

样 品 附 图(The photo of the sample)



报告结束(End)

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Test Report

No. CANEC1606725106

Date: 28 Apr 2016

Page 1 of 4

HOKURIKU ELECTRIC INDUSTRY CO., LTD.

3158 Shimo-okubo, Toyama City, Toyama Pref. Japan

The following sample(s) was/were submitted and identified on behalf of the clients as : 1-3 TERMINALS

SGS Job No. : CP16-022348 - GZ

Lot No. : LH1471216IBZ-004

Client Ref. Info. : STEEL LUMBER

Supplier :

Date of Sample Received : 20 Apr 2016

Testing Period : 20 Apr 2016 - 26 Apr 2016

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 sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Echo

Echo Yeung
Approved Signatory



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Test Report

No. CANEC1606725106

Date: 28 Apr 2016

Page 2 of 4

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN16-067251.005	Silver-grey metal

Remarks :

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

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : (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 62321-7-1:2015 , determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

Test Item(s)	Limit	Unit	MDL	005
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

IEC 62321 series is equivalent to EN 62321 series

http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,

FSP_LANG_ID:1258637,25



SGS-CTC Standards Technical Service Co., Ltd.
 Guangzhou Branch

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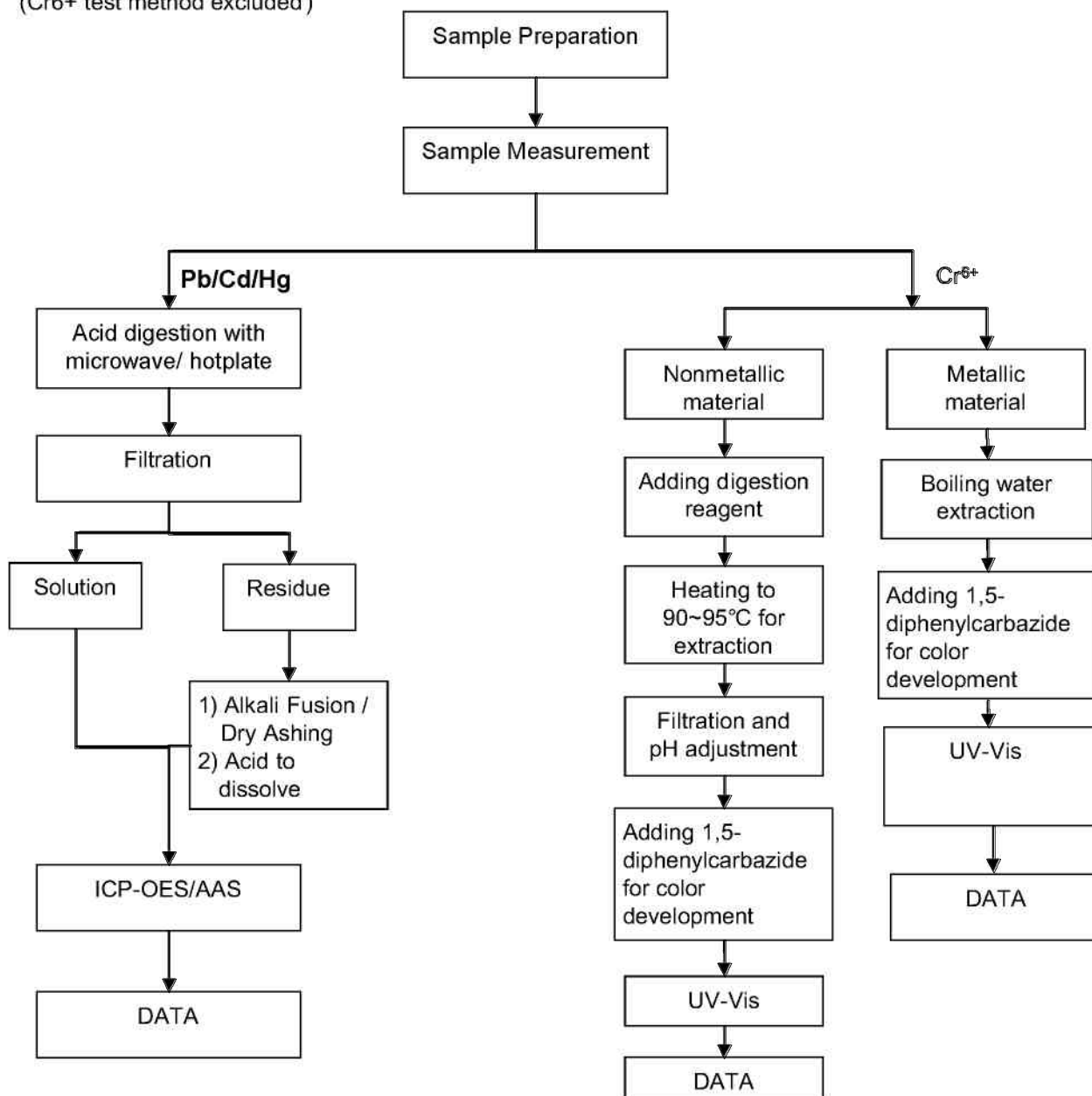
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 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

ATTACHMENTS

Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart

- 1) Name of the person who made testing: Bruce Xiao
- 2) Name of the person in charge of testing: Bella Wang
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded)



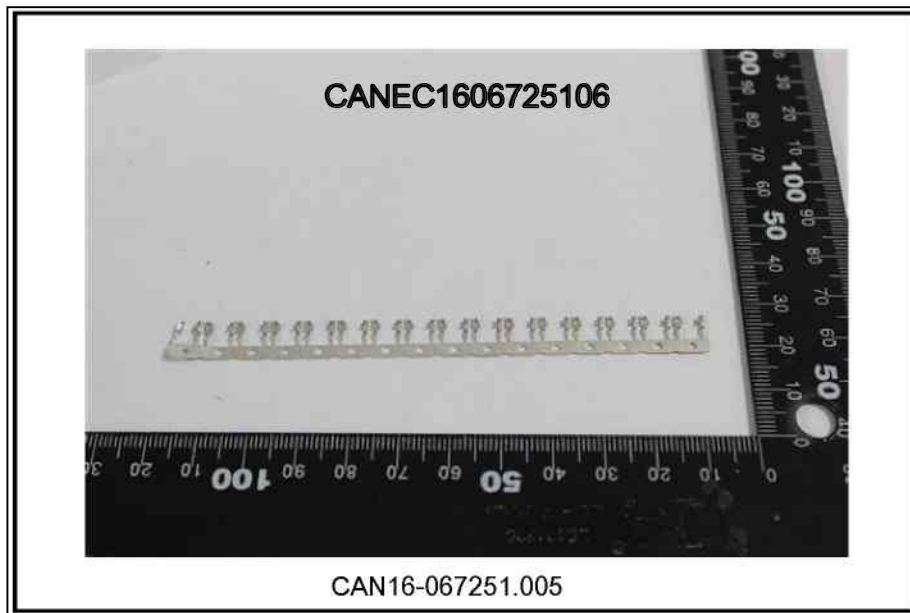
Test Report

No. CANEC1606725106

Date: 28 Apr 2016

Page 4 of 4

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

Test Report

No. CANEC1606725108

Date: 28 Apr 2016

Page 1 of 4

HOKURIKU ELECTRIC INDUSTRY CO., LTD.

3158 Shimo-okubo, Toyama City, Toyama Pref. Japan

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

SGS Job No. : CP16-022348 - GZ

Lot No. : 01A.15.12.23009A-1

Client Ref. Info. : COPPER ALLOY

Supplier :

Date of Sample Received : 20 Apr 2016

Testing Period : 20 Apr 2016 - 26 Apr 2016

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 sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Echo

Echo Yeung
Approved Signatory



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Test Report

No. CANEC1606725108

Date: 28 Apr 2016

Page 2 of 4

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN16-067251.007	Silver-grey metal

Remarks :

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

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : (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 62321-7-1:2015 , determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

Test Item(s)	Limit	Unit	MDL	007
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	16
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

IEC 62321 series is equivalent to EN 62321 series

http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25



SGS-CTC Standards Technical Service Co., Ltd.
 Guangzhou Branch

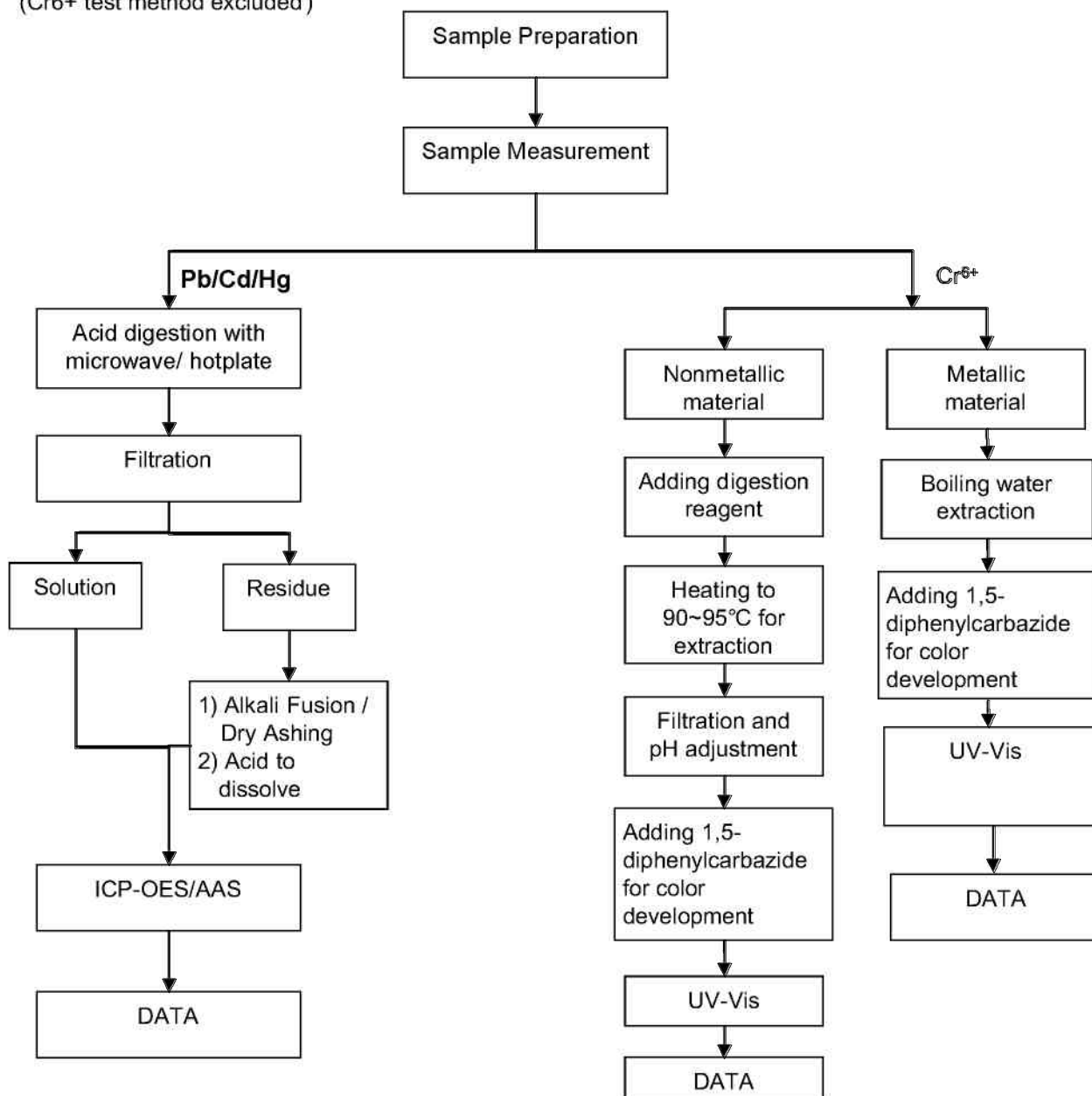
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 Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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ATTACHMENTS

Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart

- 1) Name of the person who made testing: Bruce Xiao
- 2) Name of the person in charge of testing: Bella Wang
- 3) These samples were dissolved totally by pre -conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded)



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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***