VZ067TL7 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	ICP1134
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. :	Al2O3 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

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
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

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

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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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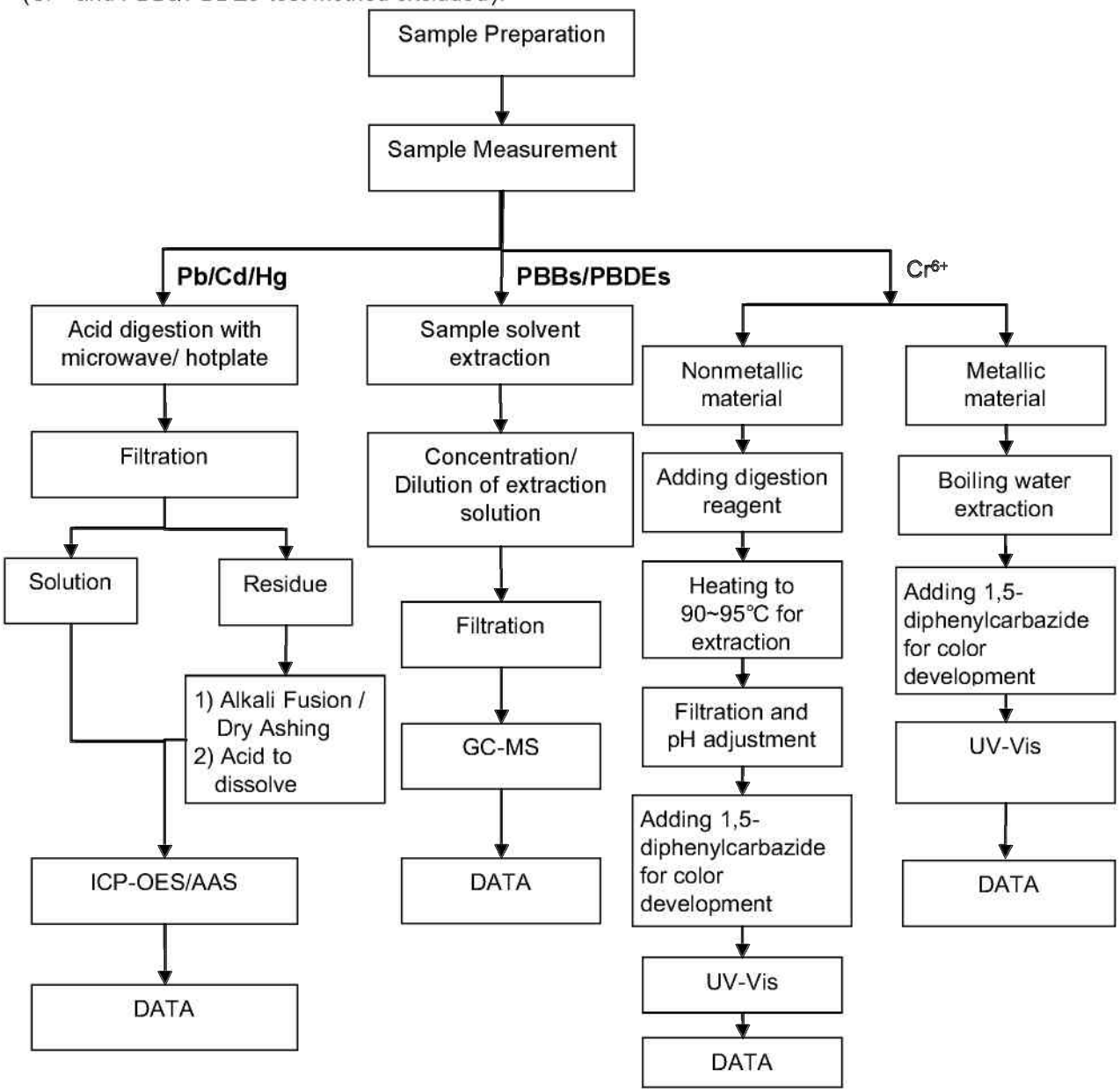
ATTACHMENTS

Pb/Cd/Hg/Cr^{6+}/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 (Cr^{6+} and PBBs/PBDEs test method excluded).



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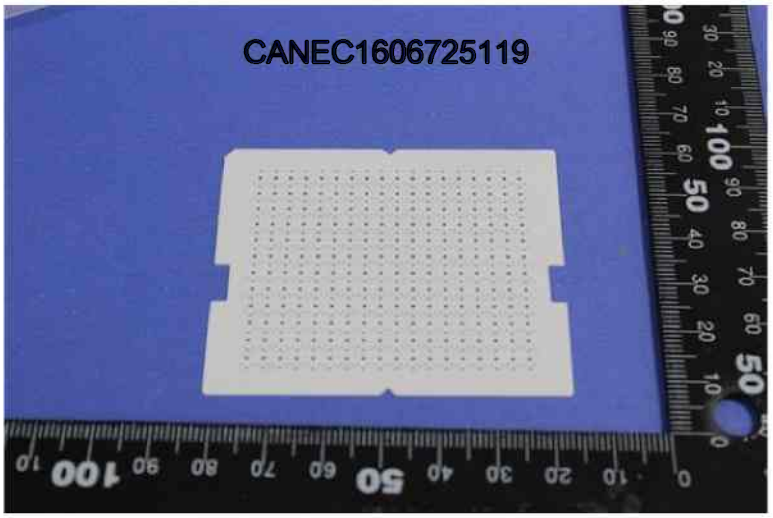
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Sample photo:



CAN16-067251.017

SGS authenticate the photo on original report only

*** End of Report ***

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Test Report

Report No. SCL01I010665002

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).

Tested by: Tony Gong

Approved by: Danny Liu
Technical Manager

Reviewed by: Cathy Huang

Date: Mar. 3, 2016

CENTRE TESTING INTERNATIONAL GROUP CO.,LTD. Report Seal

No. R185011352

Test Report

Report No. SCL01I010665002

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

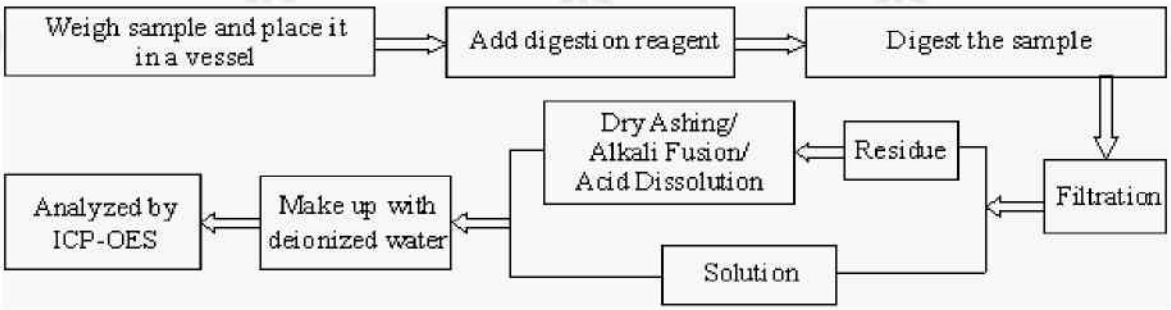
Tested Sample/Part Description Gray-green paste

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

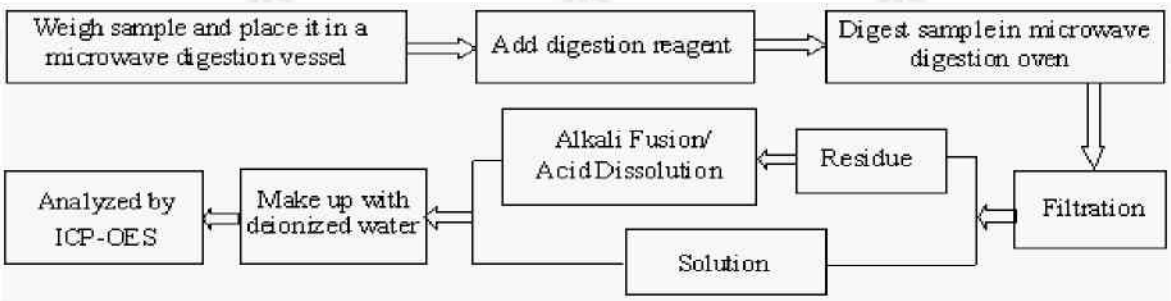
Test Report

Test Process

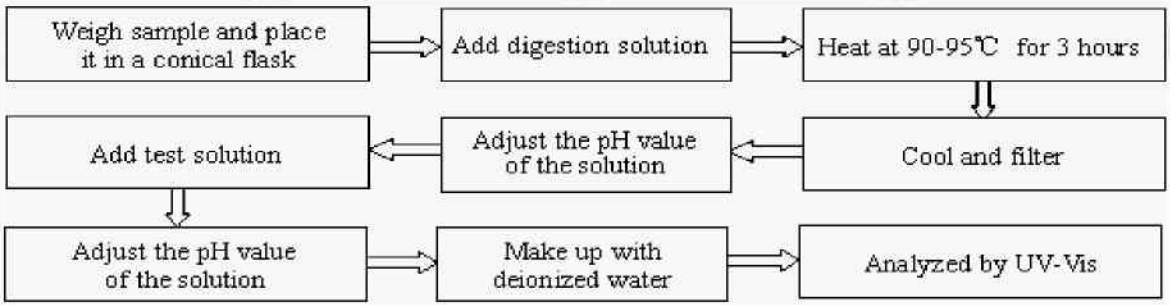
1. Lead (Pb), Cadmium (Cd)



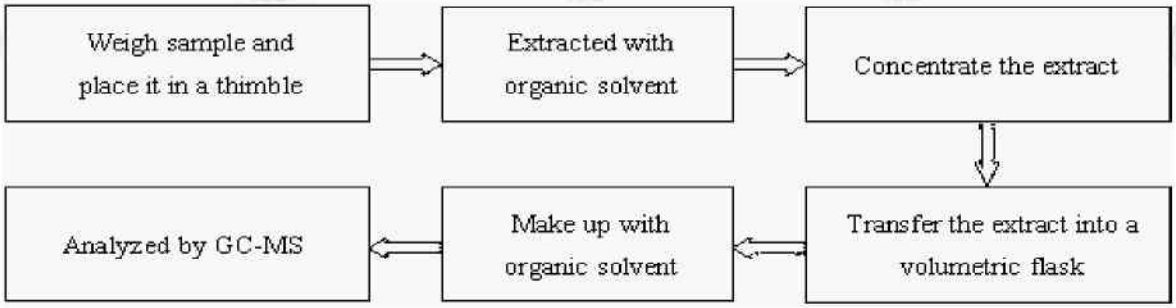
2. Mercury (Hg)



3. Hexavalent Chromium(Cr(VI))



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



Test Report

Photo(s) of the sample(s)

*** End of report ***

Test Report

No. CANEC1514075204 Date: 18 Aug 2015 Page 1 of 5

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

Yan Lee
Approved Signatory

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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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Test Item(s)	Limit	Unit	MDL	*004*
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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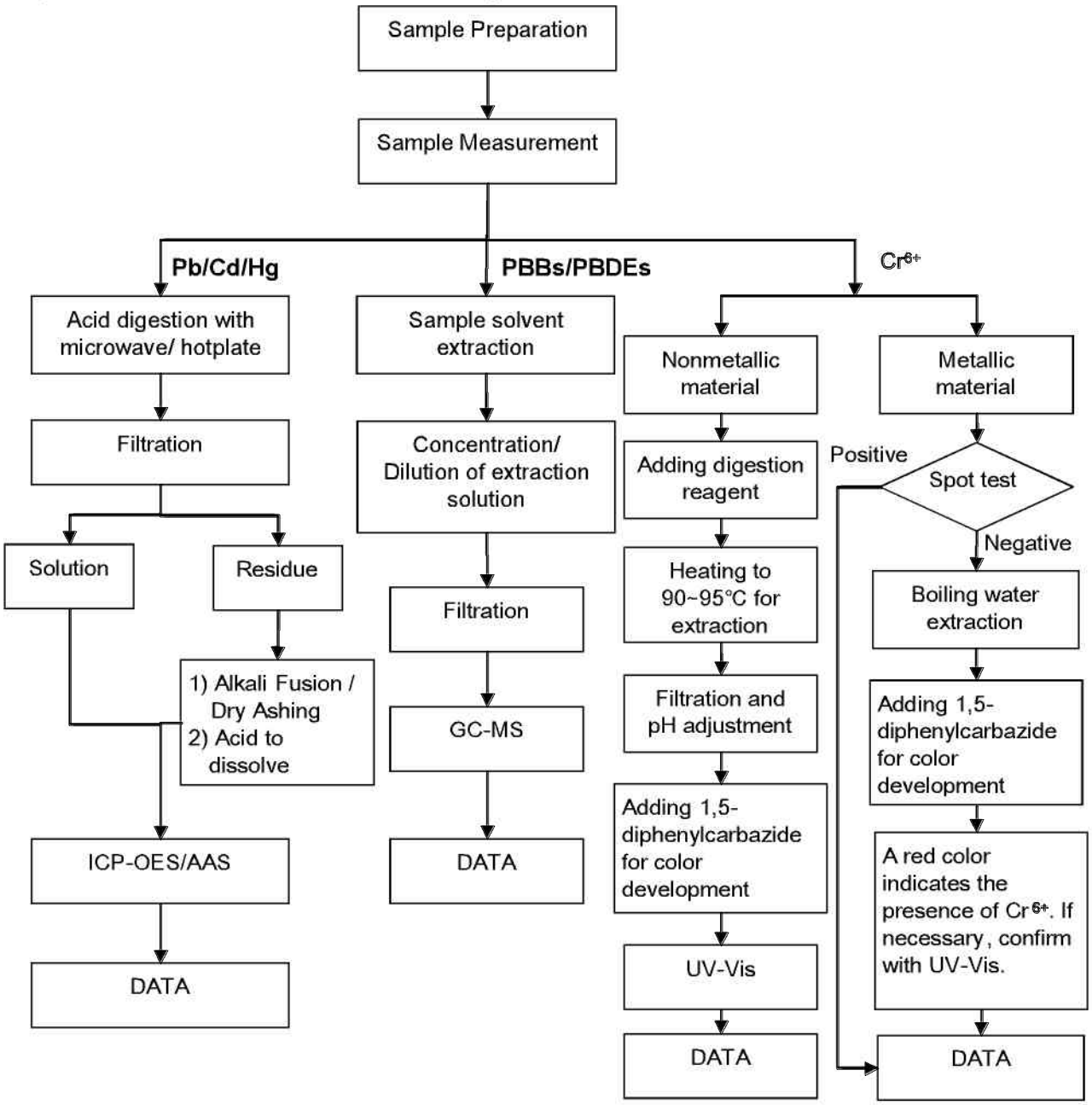
ATTACHMENTS

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 (Cr^{6+} and PBBs/PBDEs test method excluded).



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Sample photo:

CAN15-140752.004

SGS authenticate the photo on original report only

*** End of Report ***

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Test Report

Report No. SCL01H080992003

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).

Tested by: Linus

Approved by:

Danny Liu
Technical Manager

Reviewed by: Cathy

Date: Sep. 21, 2015

CENTRE TESTING INTERNATIONAL GROUP CO.,LTD. CTI Report Seal

Test Report

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

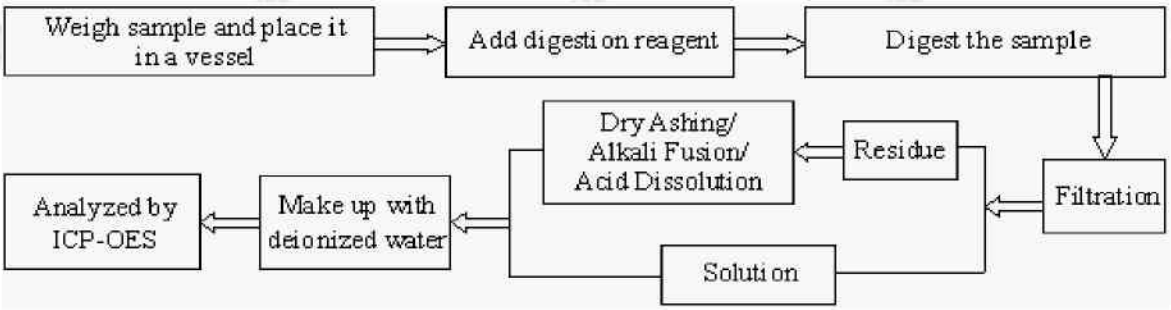
Tested Sample/Part Description Gray-green paste

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

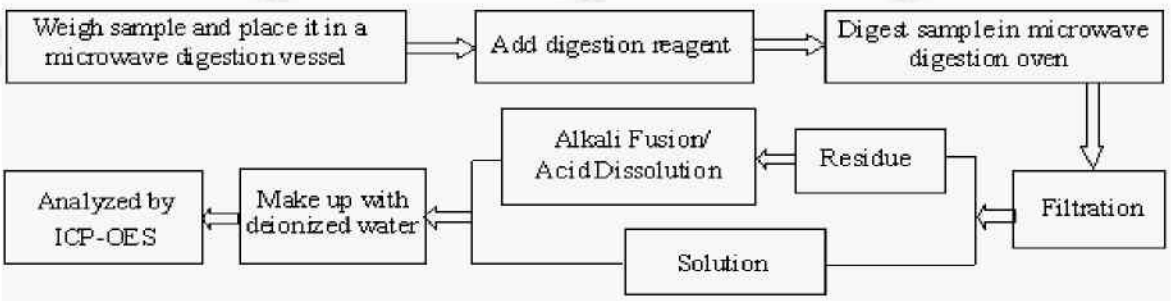
Test Report

Test Process

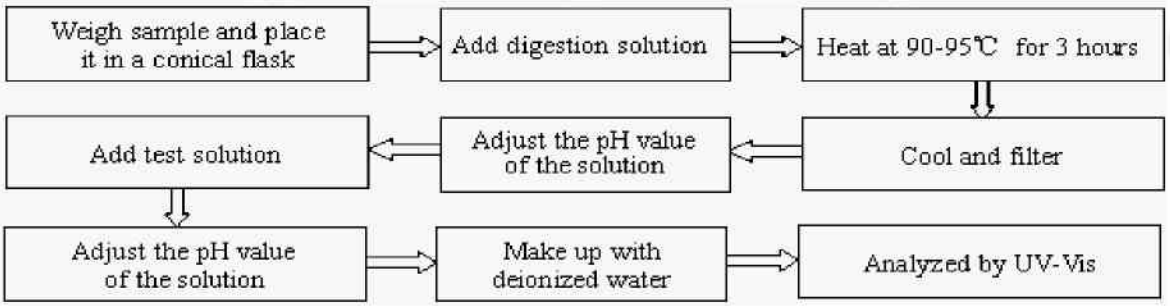
1. Lead (Pb), Cadmium (Cd)



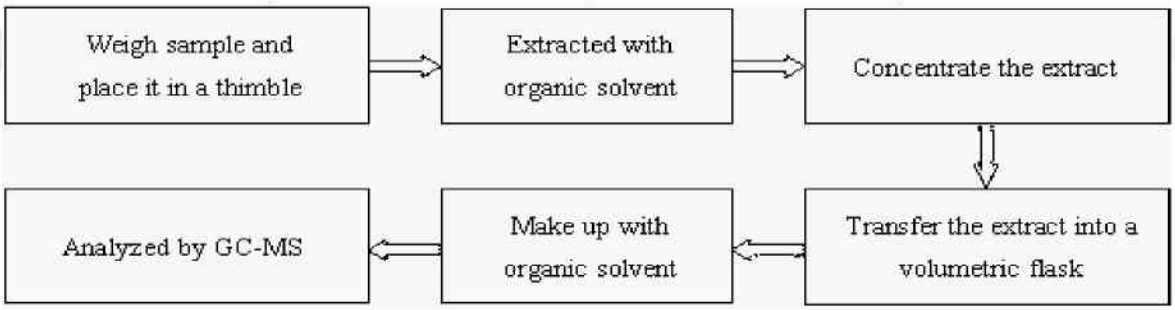
2. Mercury (Hg)



3. Hexavalent Chromium(Cr(VI))



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



Test Report

Photo(s) of the sample(s)

*** End of report ***

Test Report

Report No. SCL01H070806001

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).

Tested by: Fancy

Approved by:

Danny Liu
Technical Manager

Reviewed by: Danna

Date: Aug. 19, 2015

No. R185011509

Test Report

Report No. SCL01H070806001

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

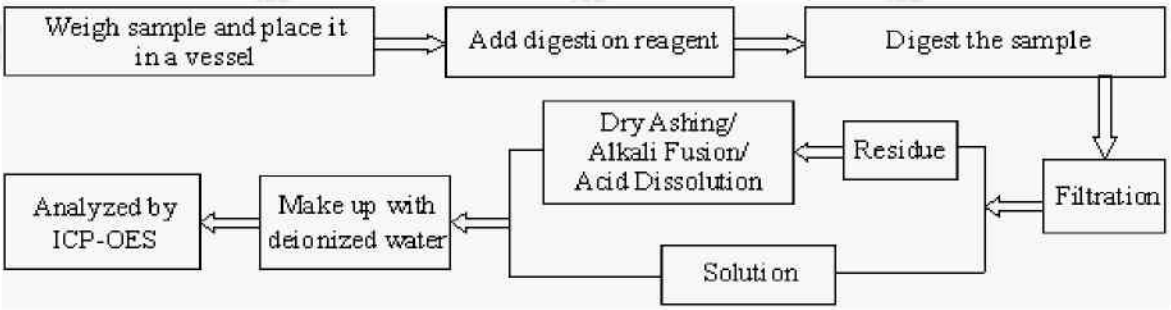
Tested Sample/Part Description Gray paste

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

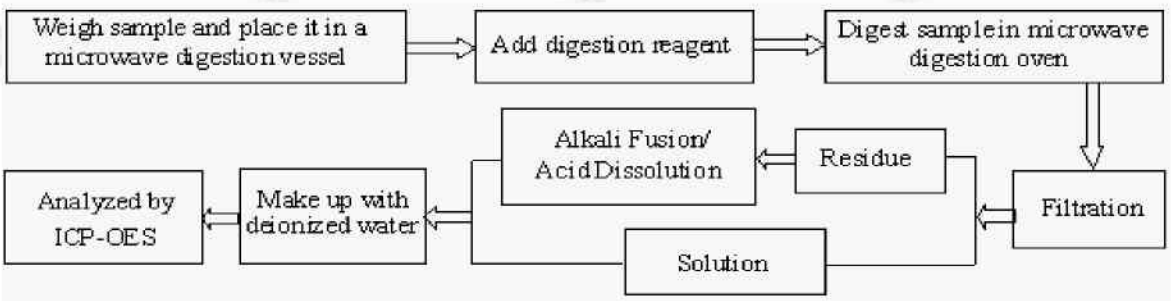
Test Report

Test Process

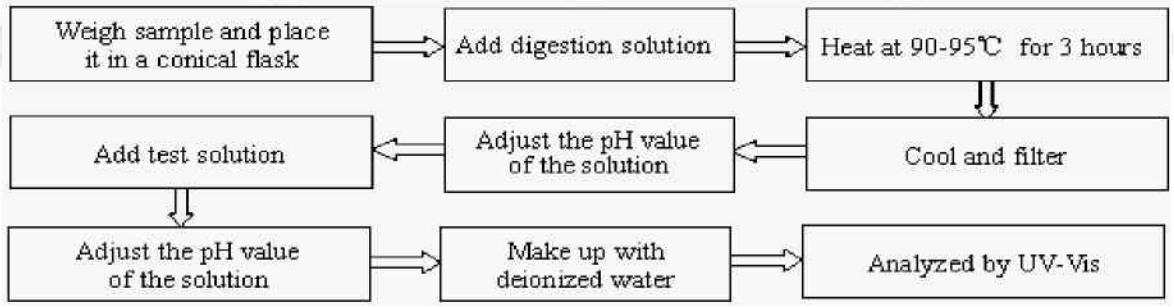
1. Lead (Pb), Cadmium (Cd)



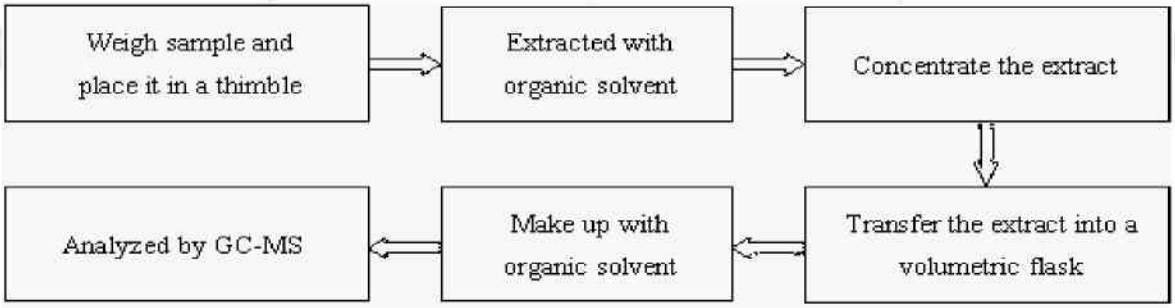
2. Mercury (Hg)



3. Hexavalent Chromium(Cr(VI))



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



Test Report

Photo(s) of the sample(s)

*** End of report ***

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
Angela

授权签字人
Signed for and on behalf of HCT
michael
Michael
实验室经理
Laboratory Manager

Shenzhen Hongcai Testing Technology Co., Ltd 深圳市虹彩检测技术有限公司 报告专用章

检测报告(Test Report)

检测报告编号(Report No.)：SZC16012081311-1 日期(Date)：2016/1/23

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		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		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

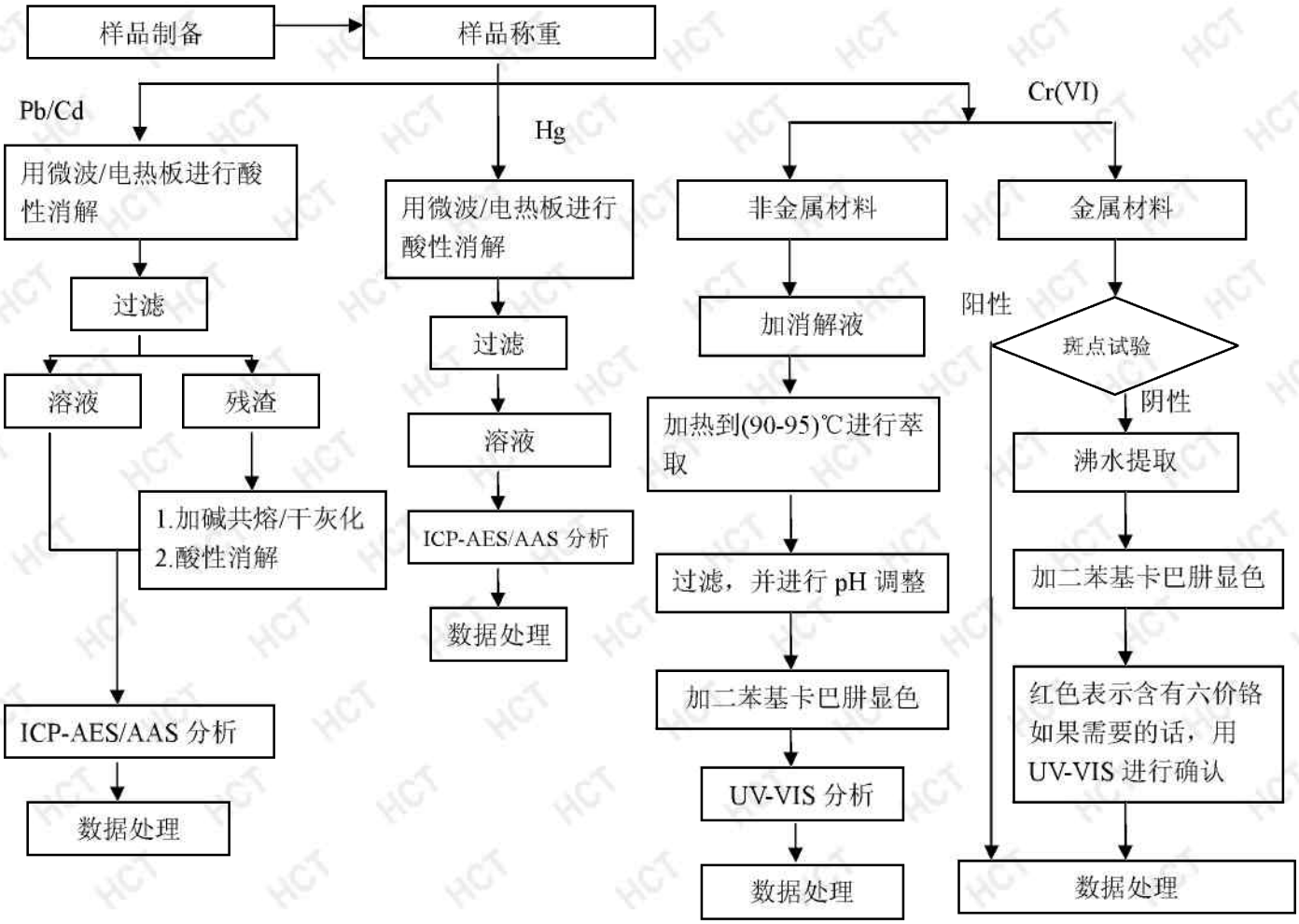
mg/kg = ppm=parts per million , "—"=Not regulated 无规定

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

Shenzhen Hongcai Testing Technology Co., Ltd 深圳市虹彩检测技术有限公司 报告专用章

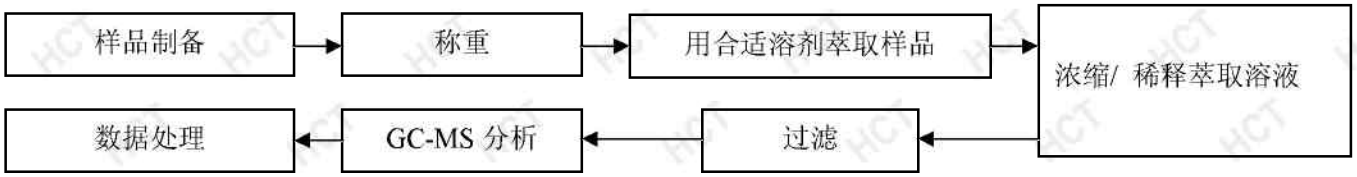
检测报告(Test Report)

检测流程图



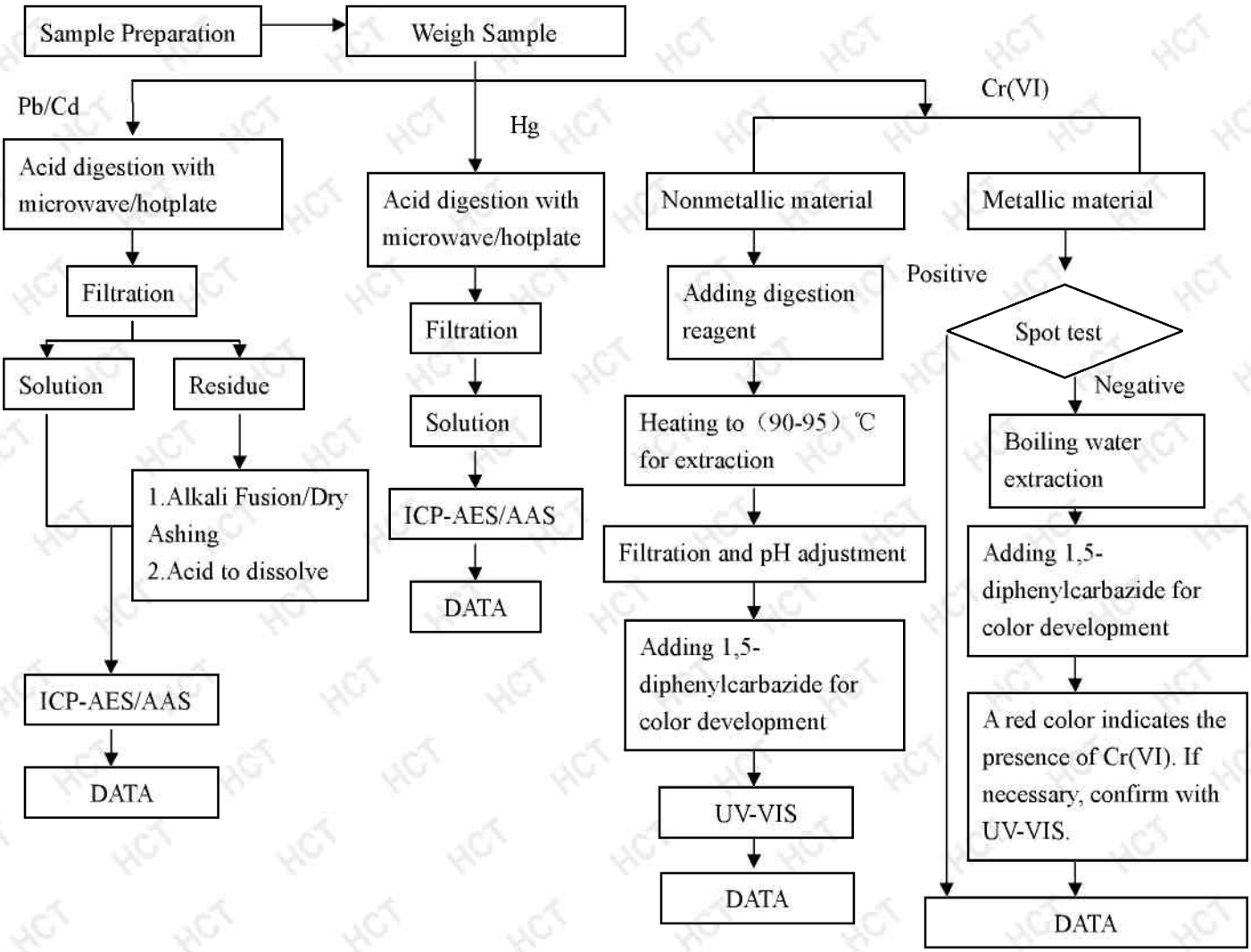
根据以上的流程图之条件，样品已经完全溶解(六价铬检测方法除外)。

PBBs/PBDEs



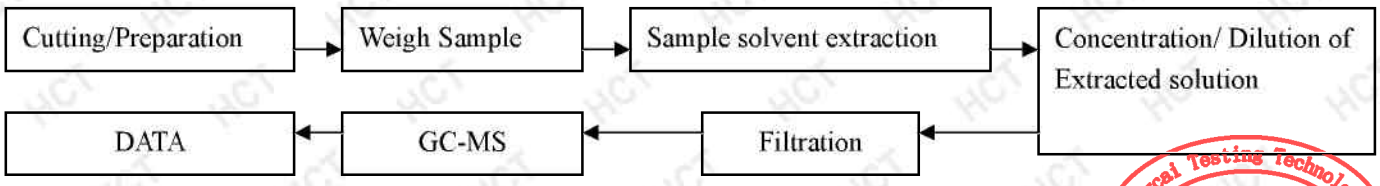
检测报告(Test Report)

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)

本报告 HCT 盖章才生效，本报告不可以删改。本报告只对送检样品的检测结果负责。
未经本公司书面授权，不得部分复制本报告做宣传品使用。

This report will go into effect with HCT stamp. This report could not be revised. This report is only responsible for the test result of submitted samples. Without written authorization, any copy of this report for propaganda is invalid.

Shenzhen Hongcai Testing Technology Co., Ltd 深圳市虹彩检测技术有限公司 报告专用章

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

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
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

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/cm²	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

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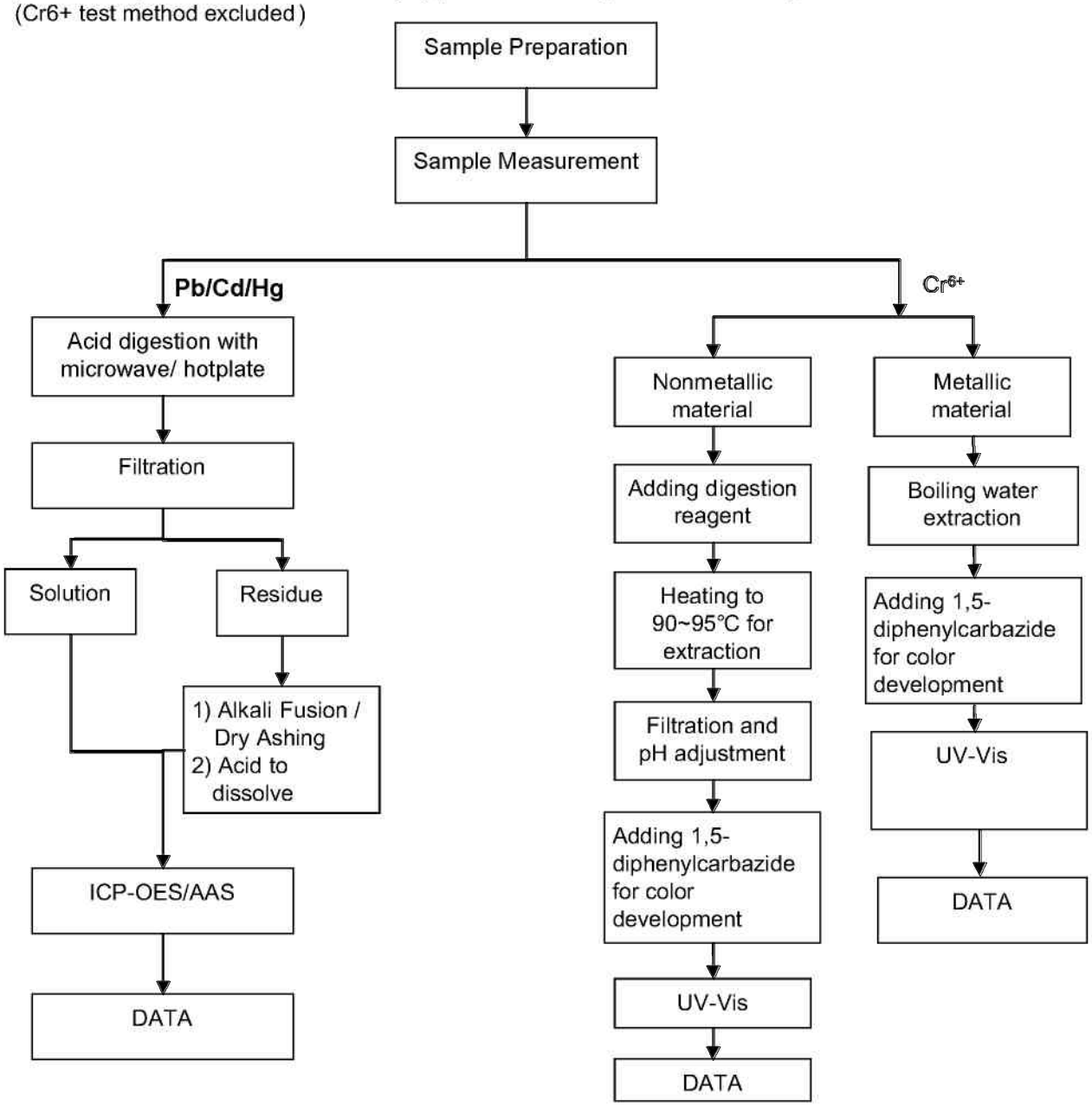
ATTACHMENTS

Pb/Cd/Hg/Cr^{6+} 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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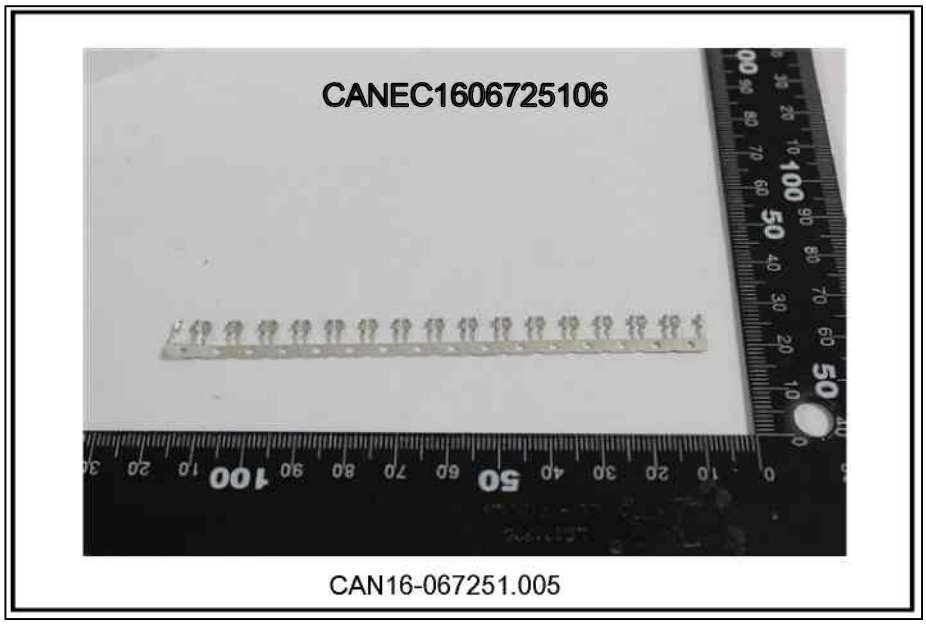
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Sample photo:



CAN16-067251.005

SGS authenticate the photo on original report only

*** End of Report ***

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Test Report

No. CANEC1606725107 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 : 2 TERMINAL

SGS Job No. :	CP16-022348 - GZ
Lot No. :	2060856
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

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
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

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN16-067251.006	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	*006*
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/cm²	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

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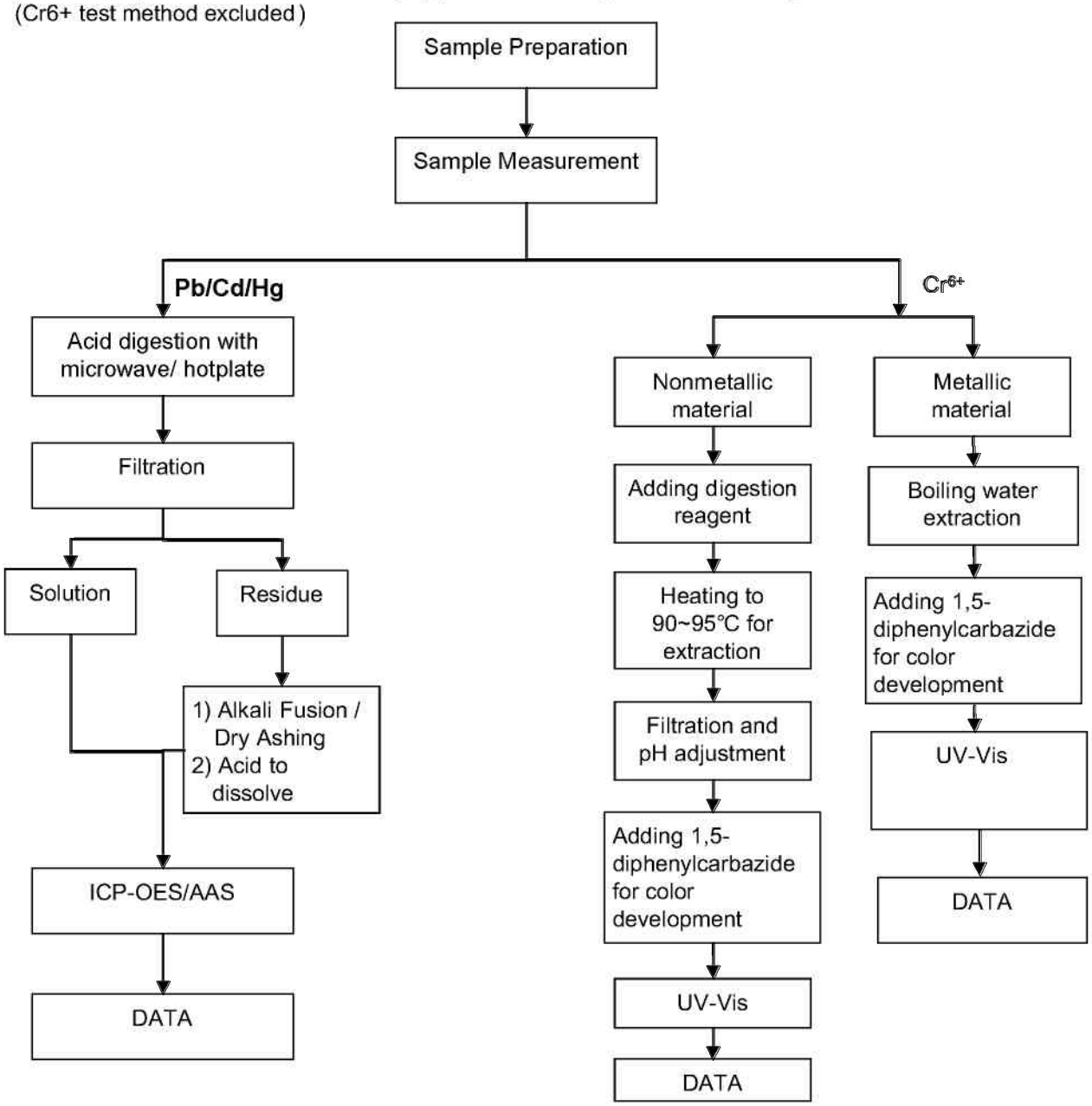
ATTACHMENTS

Pb/Cd/Hg/Cr^{6+} 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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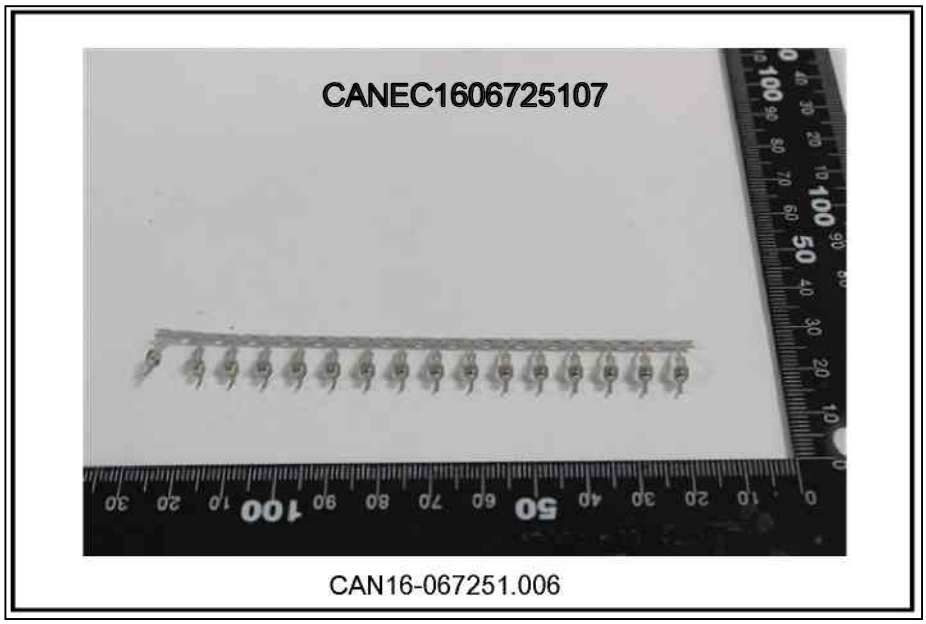
Sample photo:



CAN16-067251.006

SGS authenticate the photo on original report only

*** End of Report ***

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
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

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 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/cm²	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

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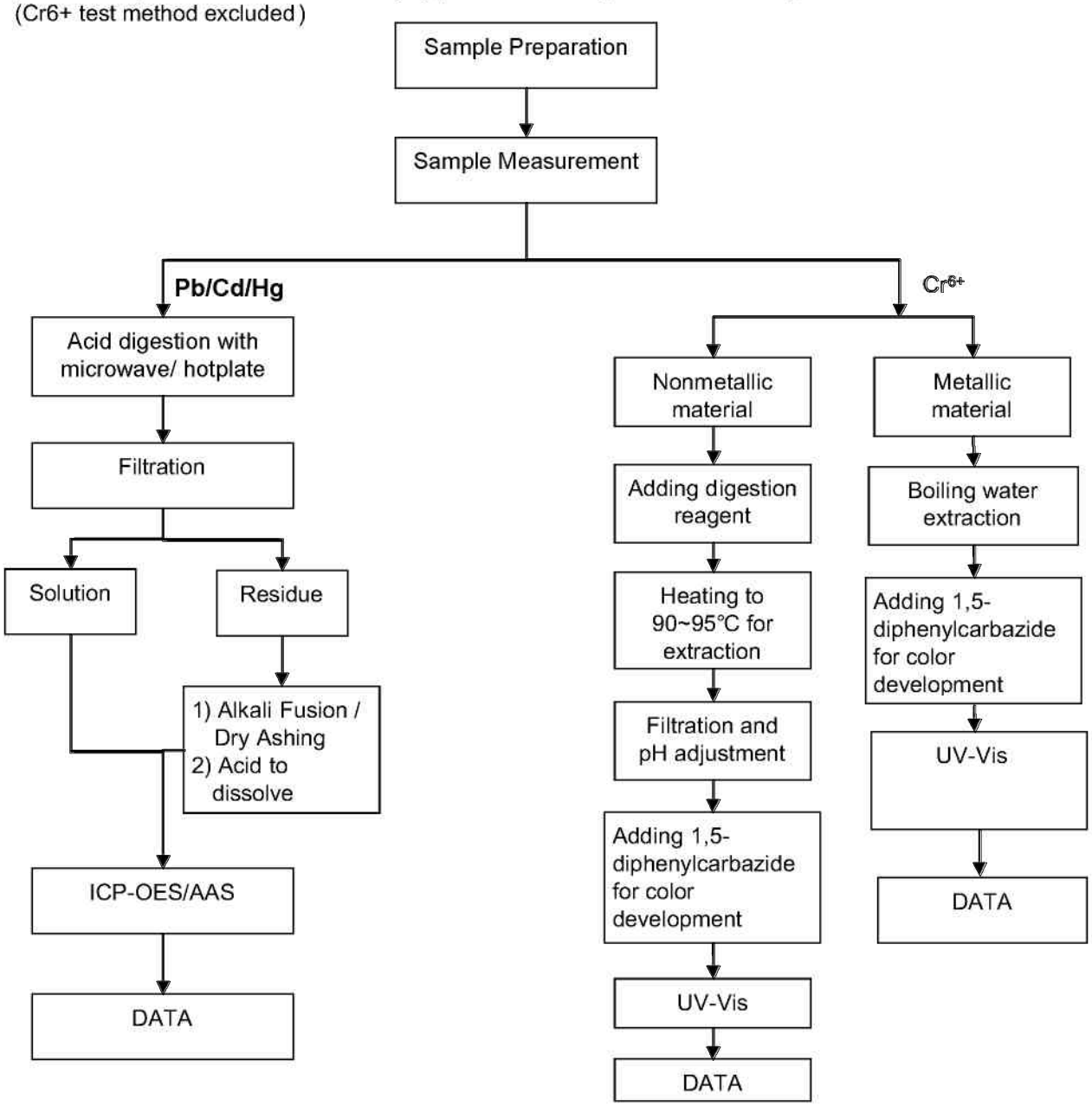
ATTACHMENTS

Pb/Cd/Hg/Cr^{6+} 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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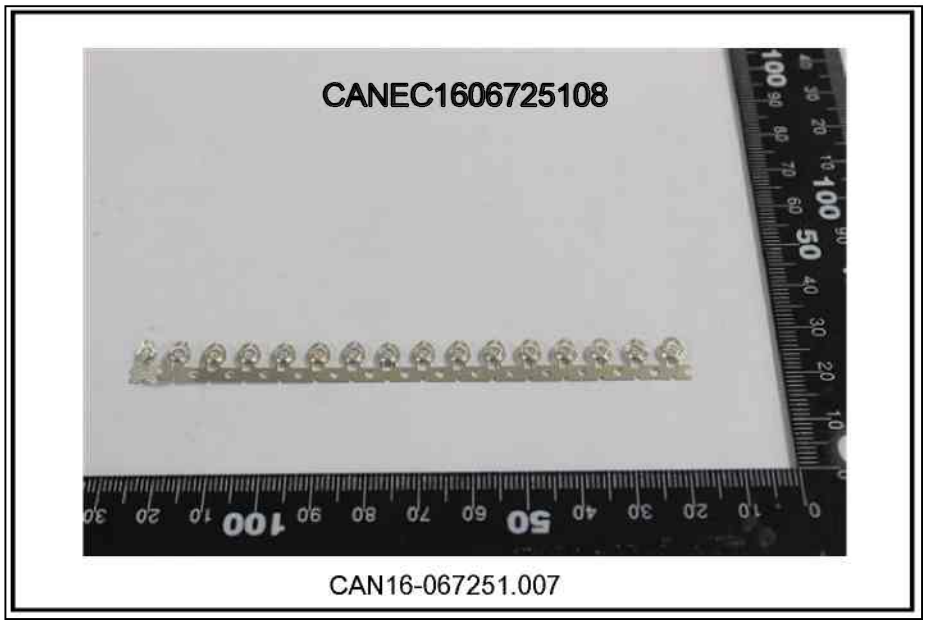
Sample photo:



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SGS authenticate the photo on original report only

*** End of Report ***

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