



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



RoHS
Compatible

CUSTOMER
PART NO

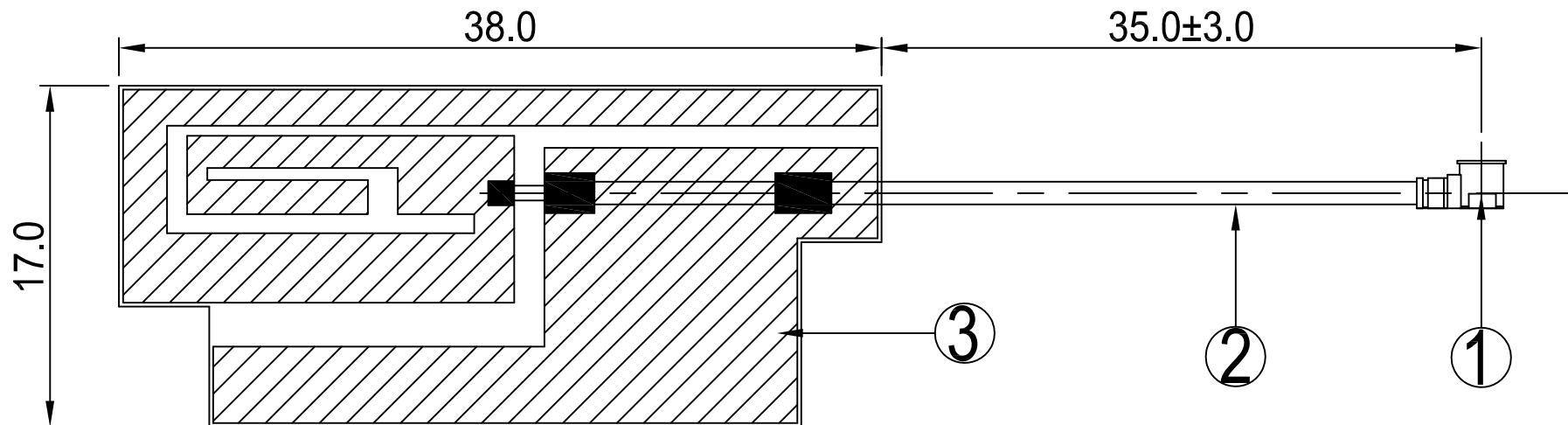
REV.

DESCRIPTION

DATE



首次发行



东莞市博聚电子有限公司
Dongguan Boju Electronic Co., Ltd.

PART NAME: RF Antenna L=35mm MHF

PART NO.: ZL-PB350B2-PEX35B

DATE:

APPROVED BY

CHECKED BY

DESIGNED BY



Tolerance
X.X ±0.50
X.XX±0.15
X° ±3°

UNITS: mm

SCALE: 1/1

REVISION: A

3	FPCB	38.0*17.0*0.1MM	FPCB	FPC10048A.P01	1
2	Coaxial Cable	O.D.1.13 Black	O.D.1.13	COA10001A.P01	1
1	Mini Connector	Au Plated	Cu	TER10001A.P01	1
NO	PART NAME	DESCRIPTION	Material	Part Number	Q.TY

电性测试报告

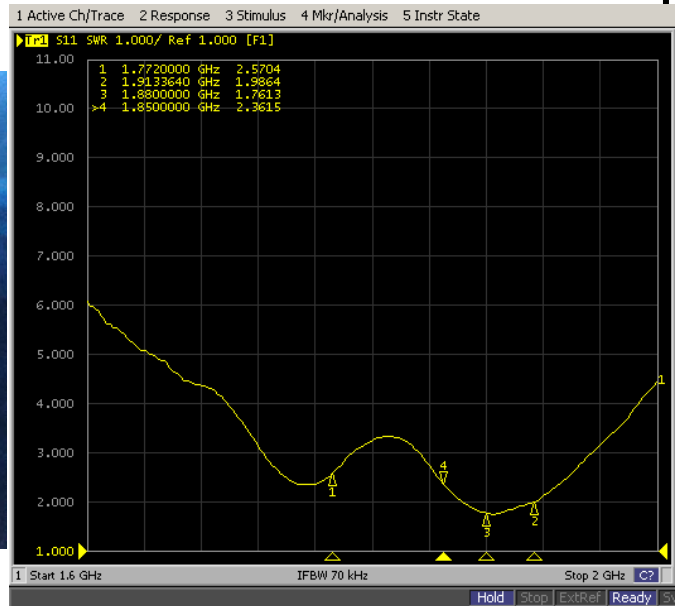
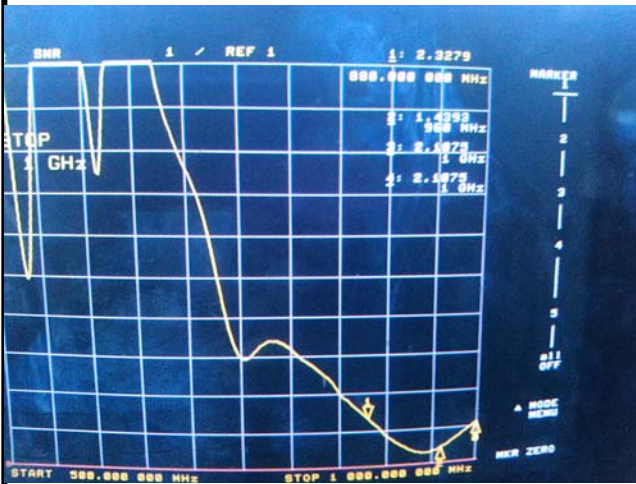
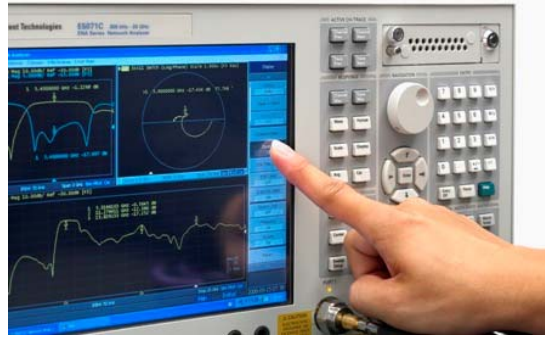
Test Reports

Electrical Properties	
Frequency	GSM
Impedance	50 Ohm Nominal
V.S.W.R	3.0 : 1 Max
Return Loss	-6 dB Max
Radiation	Omni-directional
Gain (Peak)	2 dBi
Cable Loss	2.4 dB / m Max
Polarization	Linear, Vertical
Admitted Power	2 W
Connector	Mini Connector
Physical Properties	
Antenna Material	FPCB
Cable Type	O.D. 1.13 mm // 35 mm
Operating Temp.	-10 ~ +60 °C
Storage Temp.	-10 ~ +70 °C
Cable Color	Black

S 参数测试

S Parameter Test

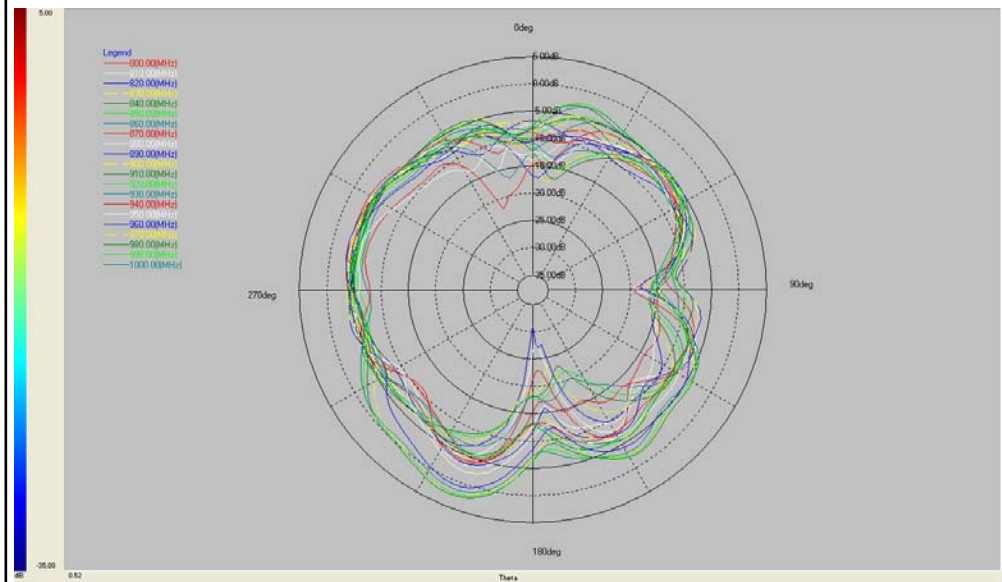
Agilent E5071C



增益测试

Gain Test

*Antenna
Radiation
Pattern
VS
Gain*



测试报告

No. CANML1401714221

日期: 2014年02月26日 第1页,共9页

珠海亚泰电子科技有限公司

中国广东省珠海市金鼎科技工业园金峰西路23号厂房一层A、B区,二层B区

以下测试之样品是由申请者所提供及确认:有胶柔性覆铜板

SGS工作编号: GC140200575 - GZ
样品接收日期: 2014年02月20日
测试周期: 2014年02月20日 - 2014年02月26日
测试要求: 根据客户要求测试
测试方法: 请参见下一页
测试结果: 请参见下一页
结论: 基于所送样品进行的测试, 镉、铅、汞、六价铬、多溴联苯(PBB)、多溴二苯醚(PBDE)的测试结果符合欧盟RoHS指令2002/95/EC的重订指令2011/65/EU附录II的限值要求。

通标标准技术服务有限公司

授权签名



Merry Lv 吕爱凤

批准签署人

备注: 本报告是编号为CANML1401714220报告的中文版本。



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测试结果:

测试样品描述:

样品编号	SGS样品ID	描述
SN1	CAN14-017142.006	带棕色表层的铜色片

备注:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = 检测极限值
- (3) ND = 未检出 (< MDL)
- (4) "-" = 未规定

RoHS指令2011/65/EU

- 测试方法:
- (1)参考IEC 62321-5:2013, 用ICP-OES测定镉的含量
 - (2)参考IEC 62321-5:2013, 用ICP-OES测定铅的含量
 - (3)参考IEC 62321-4:2013, 用ICP-OES测定汞的含量
 - (4)参考IEC 62321:2008, 用紫外-可见分光光度计比色法测定六价铬的含量
 - (5)参考IEC 62321:2008, 用GC-MS测定PBBs(多溴联苯)和PBDEs(多溴二苯醚) 的含量

测试项目	限值	单位	MDL	006
镉 (Cd)	100	mg/kg	2	ND
铅 (Pb)	1,000	mg/kg	2	ND
汞 (Hg)	1,000	mg/kg	2	ND
六价铬(Cr(VI))	1,000	mg/kg	2	ND
多溴联苯之和(PBBs)	1,000	mg/kg	-	ND
一溴联苯	-	mg/kg	5	ND
二溴联苯	-	mg/kg	5	ND
三溴联苯	-	mg/kg	5	ND
四溴联苯	-	mg/kg	5	ND
五溴联苯	-	mg/kg	5	ND
六溴联苯	-	mg/kg	5	ND
七溴联苯	-	mg/kg	5	ND
八溴联苯	-	mg/kg	5	ND
九溴联苯	-	mg/kg	5	ND
十溴联苯	-	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	1,000	mg/kg	-	ND
一溴二苯醚	-	mg/kg	5	ND
二溴二苯醚	-	mg/kg	5	ND



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测试报告

No. CANML1401714221

日期: 2014年02月26日 第3页,共9页

测试项目	限值	单位	MDL	006
三溴二苯醚	-	mg/kg	5	ND
四溴二苯醚	-	mg/kg	5	ND
五溴二苯醚	-	mg/kg	5	ND
六溴二苯醚	-	mg/kg	5	ND
七溴二苯醚	-	mg/kg	5	ND
八溴二苯醚	-	mg/kg	5	ND
九溴二苯醚	-	mg/kg	5	ND
十溴二苯醚	-	mg/kg	5	ND

备注:

(1) 最大允许极限值引用自指令2011/65/EU 附录II.

卤素

测试方法: 参照EN 14582:2007方法测定, 采用IC进行分析.

测试项目	单位	MDL	006
氟 (F)	mg/kg	50	ND
氯 (Cl)	mg/kg	50	113
溴 (Br)	mg/kg	50	ND
碘 (I)	mg/kg	50	ND

六溴环十二烷(HBCDD)

测试方法: 参考IEC 62321:2008, 用GC-MS分析.

测试项目	单位	MDL	006
六溴环十二烷(HBCDD)	mg/kg	10	ND

备注:

(1) 参考信息: RoHS指令2002/95/EC的重订指令2011/65/EU:
六溴环十二烷(HBCDD) 被列为需优先进行风险评估和考虑进行限制的物质.

邻苯二甲酸盐(或酯)

测试方法: 参考EN 14372: 2004的方法测定, 采用GC-MS进行分析.



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测试报告

No. CANML1401714221

日期: 2014年02月26日 第4页,共9页

测试项目	CAS NO.	单位	MDL	006
邻苯二甲酸二丁酯 (DBP)	84-74-2	%(w/w)	0.003	ND
邻苯二甲酸丁酯苄酯 (BBP)	85-68-7	%(w/w)	0.003	ND
邻苯二甲酸二(2-乙基己基)酯(DEHP)	117-81-7	%(w/w)	0.003	ND

备注:

(1) 参考信息: RoHS指令2002/95/EC的重订指令2011/65/EU:

邻苯二甲酸二(2-乙基己基)酯(DEHP), 邻苯二甲酸丁酯苄酯(BBP)和邻苯二甲酸二丁酯(DBP) 被列为需优先进行风险评估和考虑进行限制的物质。

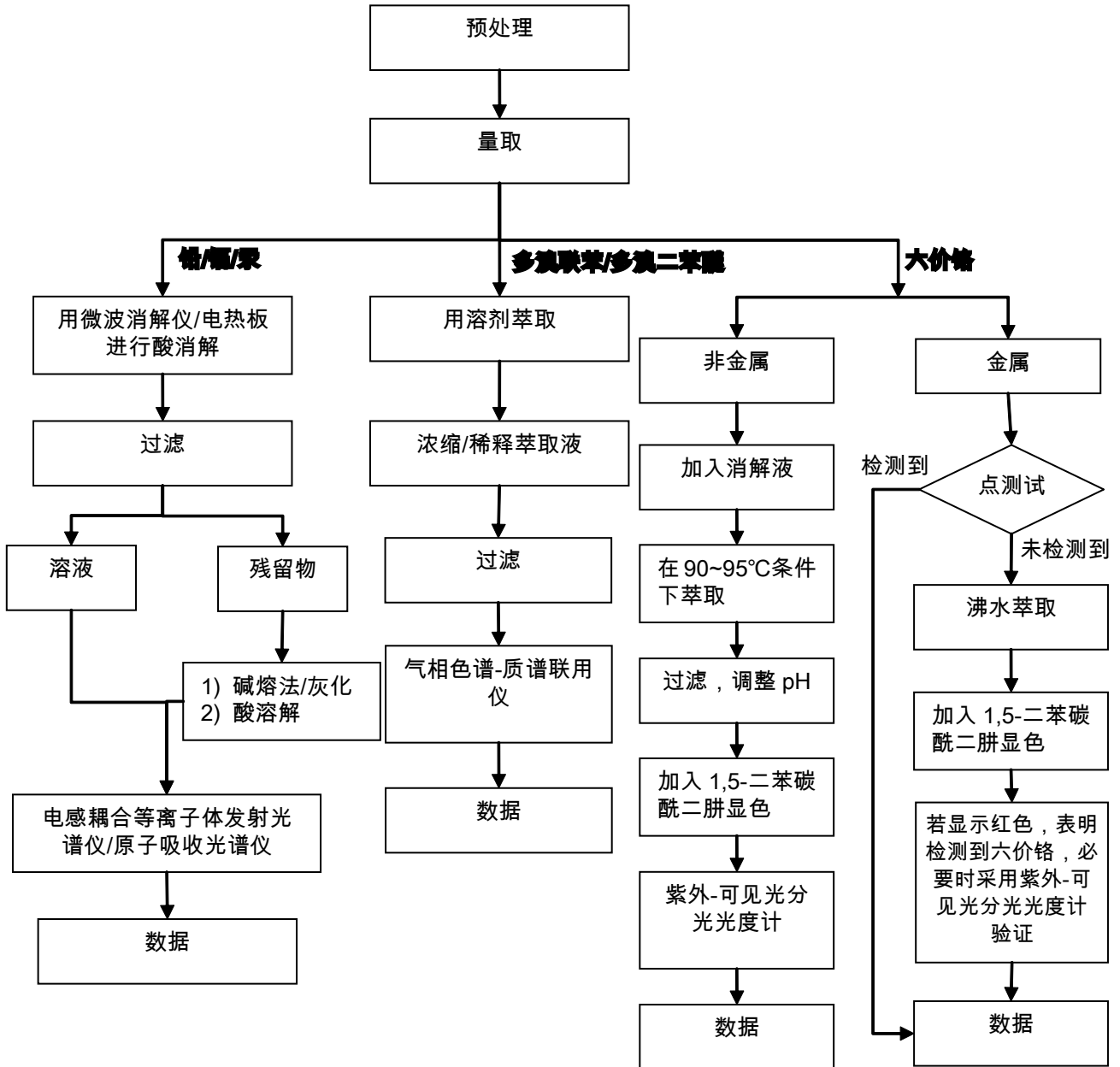


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附件

RoHS 测试流程图

- 1) 分析人员：曹阳 / 余晓璐
- 2) 项目负责人：余奕东 / 魏红
- 3) 样品按照下述流程被完全消解（六价铬和多溴联苯/多溴二苯醚测试除外）。

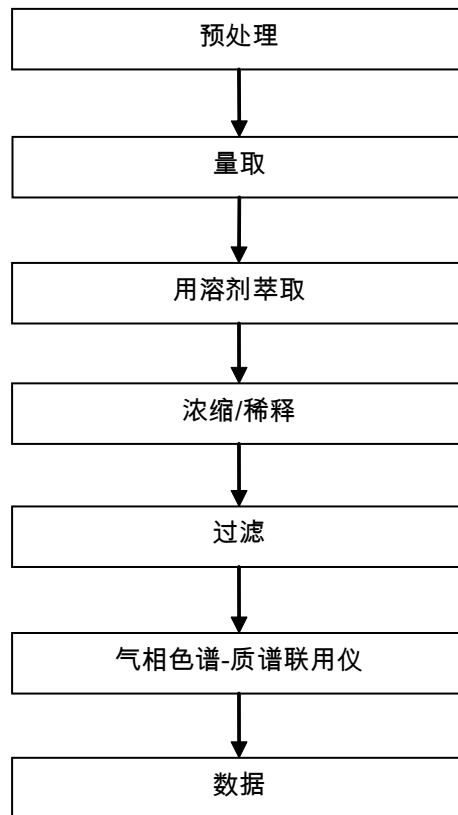


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附件

HBCDD 测试流程图

- 1) 分析人员: 余晓璐
- 2) 项目负责人: 魏红

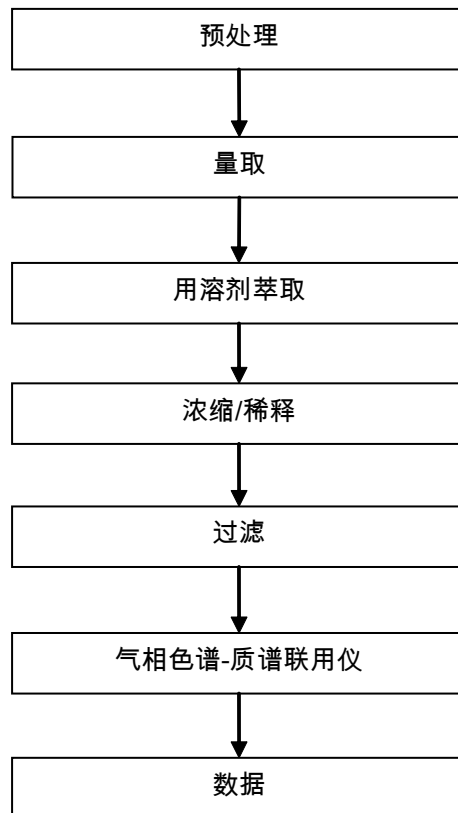


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附件

Phthalates 测试流程图

- 1) 分析人员: 刘琼
- 2) 项目负责人: 魏红

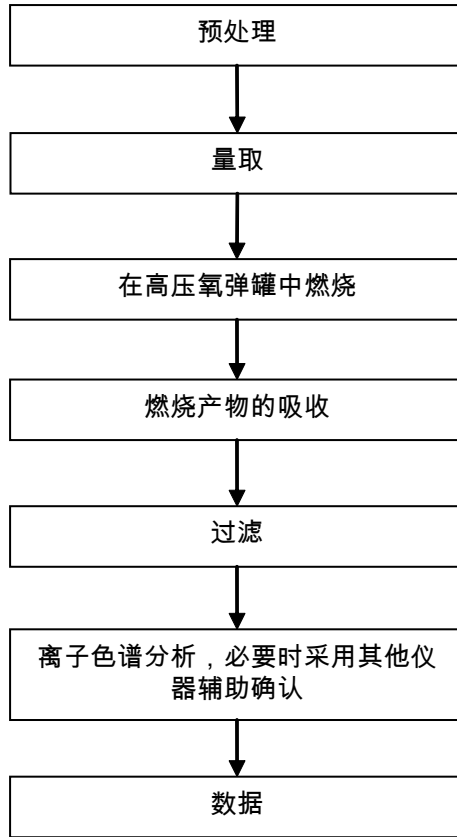


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附件

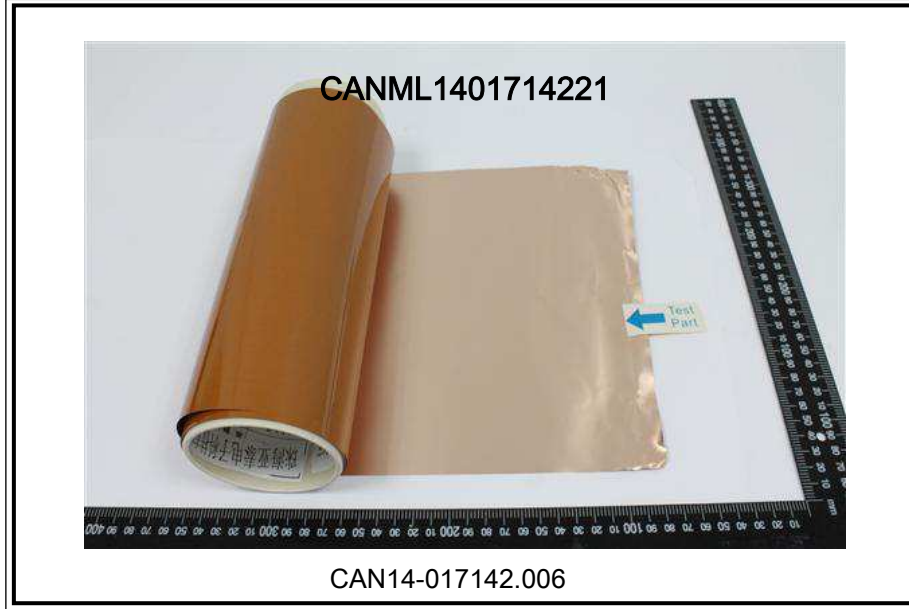
Halogen 测试流程图

- 1) 分析人员：汪丹
- 2) 项目负责人：余奕东



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样品照片:



此照片仅限于随SGS正本报告使用

*** 报告完 ***

检测报告 Test Report

报告编号 RHS05F011891004E
Report No. RHS05F011891004E

第 1 页 共 8 页
Page 1 of 8

申请单位 苏州市华诺线缆科技有限公司
Applicant SUZHOU HUANUO CABLE TECHNOLOGY CO., LTD
地址 苏州市相城区太平镇太平大街
Address TAIPING STREET TAIPING TOWN XIANGCHENG, SUZHOU

以下测试之样品及样品信息由申请者提供并确认
The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

样品名称 电线电缆料
Sample Name Wire and cable materials
样品型号 镀银铜丝
Part No. Silver-plated copper wire

样品接收日期 2013.08.22
Sample Received Date Aug. 22, 2013

样品检测日期 2013.08.22-2013.08.26
Testing Period Aug. 22, 2013 to Aug. 26, 2013

检测要求 根据客户要求, 对所提交样品中的六溴环十二烷(HBCDD), 铅(Pb), 镉(Cd), 汞(Hg), 六价铬(Cr(VI)), 多溴联苯(PBBs), 多溴二苯醚(PBDEs), 邻苯二甲酸酯进行测试。

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

检测依据/检测结果 请参见下页。
Test Method/Test Result(s) Please refer to the following page(s).

主 检
Tested by Chen Lijuan
批 准
Approved by Su Hongwei

Su Hongwei
Senior Laboratory Manager



审 核
Reviewed by Zhong Yijun
日 期
Date 2013.08.26

No. 1102121596

深圳市华测检测技术股份有限公司上海分公司
Centre Testing International Corporation Shanghai Branch No.1996, New Jinqiao Road, Pudong District, Shanghai, China
上海市浦东新区新金桥路1996号

检测报告

Test Report

 报告编号 RHS05F011891004E
 Report No. RHS05F011891004E

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 Page 2 of 8

检测依据 Test Method

测试项目 Test Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅(Pb) Lead(Pb)	IEC 62321:2008 Ed.1 Sec.9	ICP-OES
镉(Cd) Cadmium(Cd)	IEC 62321:2008 Ed.1 Sec.9	ICP-OES
汞(Hg) Mercury(Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex B	UV-Vis
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
多溴二苯醚(PBDEs) Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
六溴环十二烷(HBCDD) Hexabromocyclododecane (HBCDD)	参考US EPA 3550C: 2007 Refer to US EPA 3550C:2007	GC-MS
邻苯二甲酸酯 Phthalates	参考EN 14372: 2004(E) Refer to EN 14372:2004(E)	GC-MS

检测结果 Test Result(s)

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
铅(Pb) Lead(Pb)	N.D.	2 mg/kg
镉(Cd) Cadmium (Cd)	N.D.	2 mg/kg
汞(Hg) Mercury(Hg)	N.D.	2 mg/kg
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	阴性 Negative	/

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg

检测报告 Test Report

报告编号 RHS05F011891004E
Report No. RHS05F011891004E

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九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
多溴二苯醚 (PBDEs) Polybrominated Diphenyl Ethers (PBDEs)		
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	5 mg/kg

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
六溴环十二烷 (HBCDD) Hexabromocyclododecane (HBCDD)	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检测限 MDL
邻苯二甲酸酯 Phthalates		
邻苯二甲酸二正丁酯 (DBP) Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄酯 (BBP) Benzylbutyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基己基)酯 (DEHP) Bis(2-ethyl(hexyl)) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg

测试样品/ 部位描述 银白色金属丝
Tested Sample/Part Description Silvery white metal wire

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注释: 对于检测铅, 镉, 汞之样品已完全溶解。

-N.D. = 未检出 (小于方法检测限)

-mg/kg= ppm = 百万分之几

-阴性表示不含有六价铬, 即由表面积为50cm²的样品所萃取出来的溶液中的六价铬的浓度小于0.02mg/kg

Note: 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

-Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm² sample surface area used.

备注: 报告编号中“E”表示此报告为中英文对照版本。

Remark: The end sign of report number E represents the bilingual version.

检测报告 Test Report

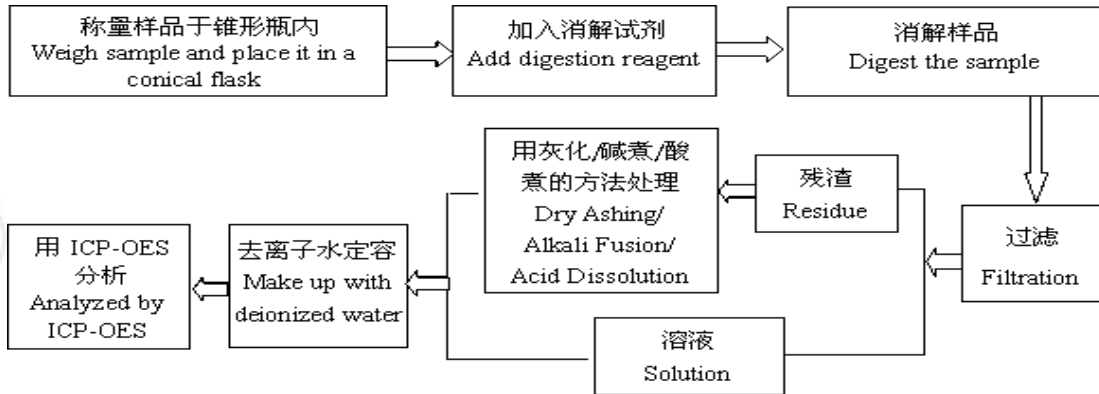
报告编号 RHS05F011891004E
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检测流程 Test Process

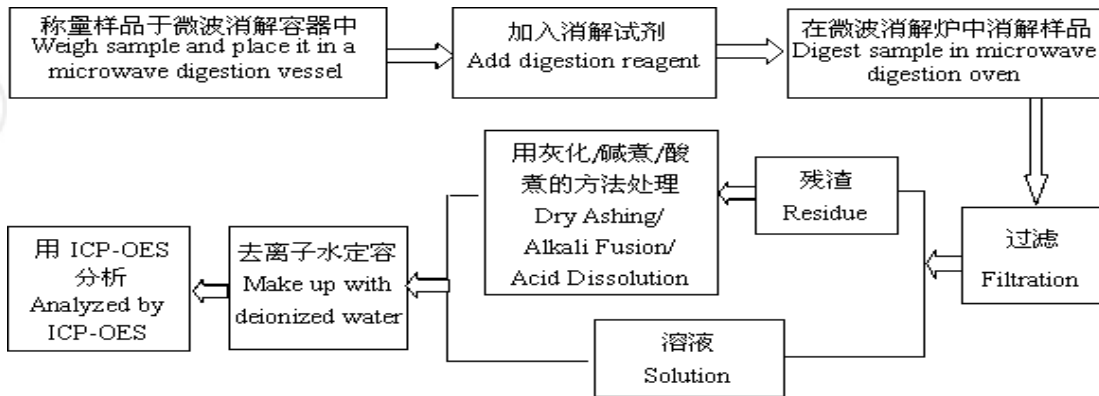
1. 铅(Pb), 镉(Cd)

Lead(Pb), Cadmium(Cd)



2. 汞(Hg)

Mercury(Hg)

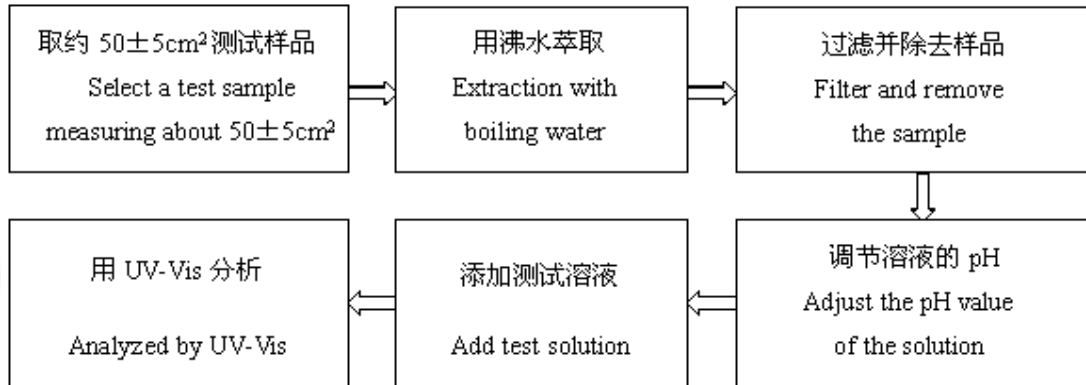


检测报告 Test Report

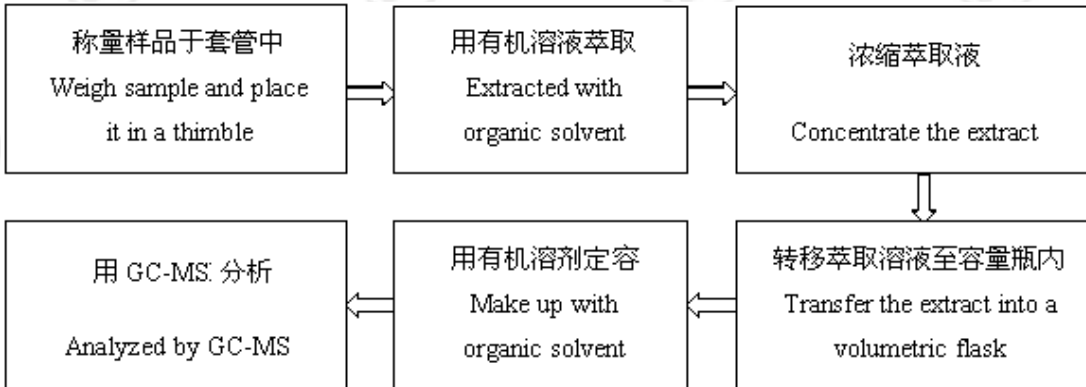
报告编号 RHS05F011891004E
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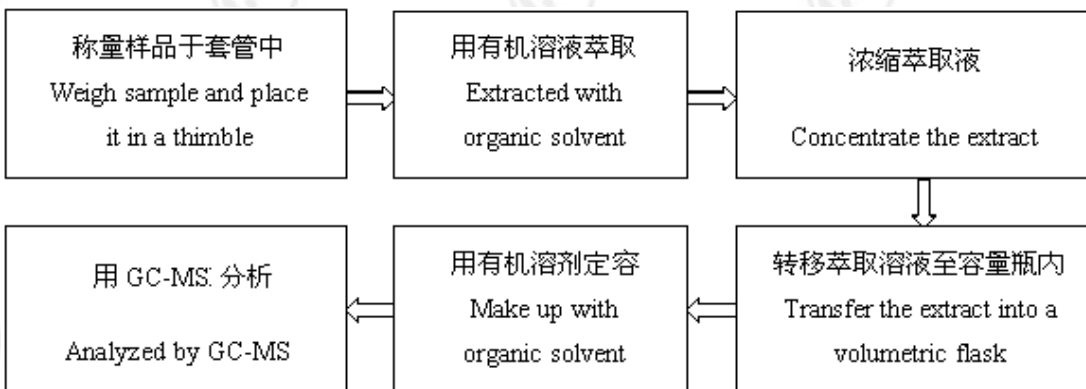
3. 六价铬 (Cr (VI))
Hexavalent Chromium (Cr (VI))



4. 邻苯二甲酸酯
Phthalates



5. 多溴联苯 (PBBs), 多溴二苯醚 (PBDEs)
Polychlorinated Biphenyls (PBBs), Polychlorinated Diphenyl Ethers (PBDEs)

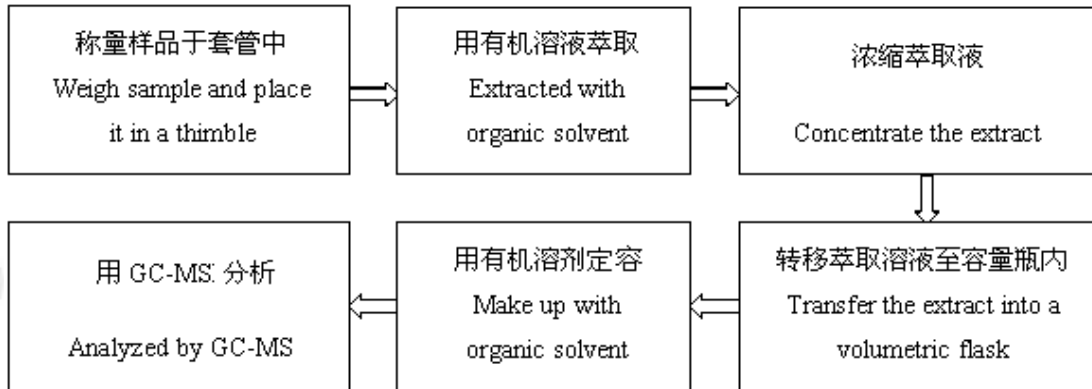


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6. 六溴环十二烷(HBCDD)
Hexabromocyclododecane (HBCDD)



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样品图片 Photo(s) of the sample(s)



*** 报告结束 ***
*** End of report ***

检测报告无批准人签字及“报告专用章”无效，本报告检测结果仅对受测样品负责。未经CTI书面同意，不得部分复制本报告。

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

POLYPLASTICS TAIWAN CO., LTD.
NO.13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

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

Sample Description : PBT
Style/Item No. : 315NF ED3002 / Lot No.1874090
Color : ED3002
Sample Receiving Date : 2013/07/08
Testing Period : 2013/07/08 TO 2013/07/15
Sample Submitted By : POLYPLASTICS TAIWAN CO., LTD.

=====
Test Result(s) : Please refer to next page(s).



Ray Chang / Asst. Manager
Signed for and on behalf of
SGS Taiwan Limited

POLYPLASTICS TAIWAN CO., LTD.
NO.13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

Test Result(s)

PART NAME NO.1 : ED3002 PBT

Test Item (s):	Unit	Method	MDL	Result		
				No.1		
Cadmium (Cd)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.		
Lead (Pb)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	6.47		
Mercury (Hg)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.		
Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.		
Sum of PBBs			-	n.d.		
Monobromobiphenyl	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	5	n.d.		
Dibromobiphenyl			5	n.d.		
Tribromobiphenyl			5	n.d.		
Tetrabromobiphenyl			5	n.d.		
Pentabromobiphenyl			5	n.d.		
Hexabromobiphenyl			5	n.d.		
Heptabromobiphenyl			5	n.d.		
Octabromobiphenyl			5	n.d.		
Nonabromobiphenyl			5	n.d.		
Decabromobiphenyl			5	n.d.		
Sum of PBDEs					-	n.d.
Monobromodiphenyl ether			mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	5	n.d.
Dibromodiphenyl ether	5	n.d.				
Tribromodiphenyl ether	5	n.d.				
Tetrabromodiphenyl ether	5	n.d.				
Pentabromodiphenyl ether	5	n.d.				
Hexabromodiphenyl ether	5	n.d.				
Heptabromodiphenyl ether	5	n.d.				
Octabromodiphenyl ether	5	n.d.				
Nonabromodiphenyl ether	5	n.d.				
Decabromodiphenyl ether	5	n.d.				

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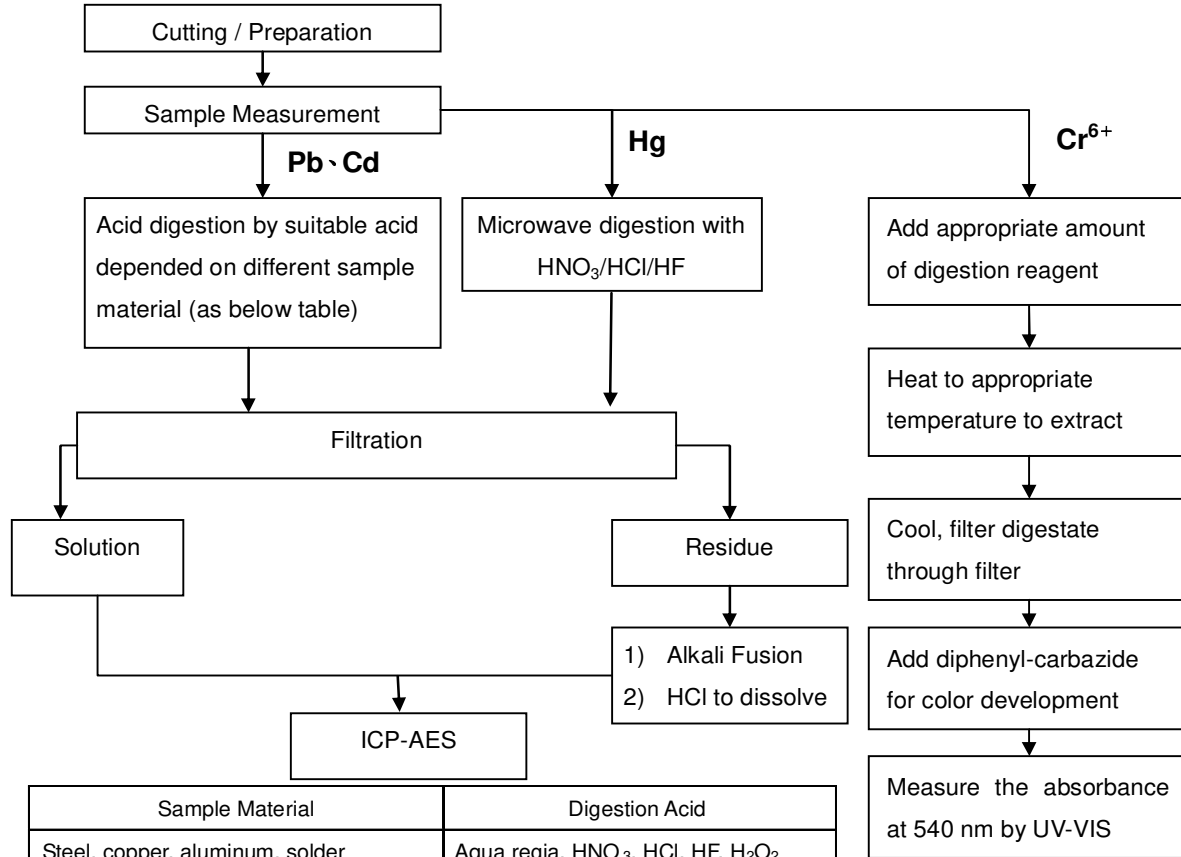
Test Item (s):	Unit	Method	MDL	Result
				No.1
Halogen				
Halogen-Fluorine (F) (CAS No.: 014762-94-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	731
Halogen-Chlorine (Cl) (CAS No.: 022537-15-1)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 010097-32-2)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Iodine (I) (CAS No.: 014362-44-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

- Note :
1. mg/kg = ppm ; 0.1wt% = 1000ppm
 2. n.d. = Not Detected
 3. MDL = Method Detection Limit
 4. "-" = Not Regulated

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NO.13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr6+ test method excluded)
- 2) Name of the person who made measurement: Alex Chang
- 3) Name of the person in charge of measurement: Ray Chang



Sample Material	Digestion Acid
Steel, copper, aluminum, solder	Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂
Glass	HNO ₃ /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO ₃
Plastic	H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl
Others	Any acid to total digestion

Note :** (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95 °C.
(2) For metallic material, add pure water and heat to boiling.