



ICP Test Report Certification Packet

Company name: Littelfuse, Inc.
Product Series: Class J (100 A) & HR (250V 100A) Series
Product #: LFJ 100A, LFJ601003CID, HR (250V 100A)
Issue Date: January 25, 2012

It is hereby certified by Littelfuse, Inc. that there is neither RoHS (EU Directive 2002/95/EC)-restricted substance nor such use, for materials to be used for unit parts, for packing/packaging materials, and for additives and the like in the manufacturing processes. In addition, it is hereby reported to you that the parts and sub-materials, the materials to be used for unit parts, the packing/packaging materials, and the additives and the like in the manufacturing processes, are all composed of the following components.

Issued by: 
KRISTEEN BACILA

<Global EHS Engineer>

(1) Parts, sub-materials and unit parts

This document covers the J 100 A and HR 250V 100A RoHS-Compliant series products manufactured by Littelfuse, Inc.

< Raw Materials Used

Please see Table 1

(2) The ICP data on all measurable substances

Please see appropriate pages as identified in Table 1

Remarks :



Table 1: List of Raw Materials covered by this report

Total Parts	Raw Material Part Number	Raw Material Description	Page(s)
1	NA	Base – BMC FTI400	3-9
2	NA	Indicator – PC2407	10-15
6	NA	Terminal Block - Aluminum	16-20
7	NA	Set screws - Aluminum	16-20
8	NA	Screws , Nuts & Bolts - Zinc Plated Steel	21-25
9	NA	Clip - T3 Copper Alloy	26-30
10	NA	Spring Clamp/ Reinforcing Clip - 65Mn	31-35
12	NA	Neon Lamp Sub-assay	35-46
13	NA	Tin Plating	47-50
14	NA	Zinc Plating	51-54
15	NA	Epoxy	55-62



**BUREAU
VERITAS**

TEST REPORT

LAB NO. 报告号 : (6611)202-0652
DATE 日期 : July 27, 2011
PAGE 页码 : 1 OF 7

APPLICANT : **BMC CHINA CO., LIMITED**
A AREA11-12 XISHAN ECONOMIC DEVELOPMENT ZONE
PRIVATELY OWNED SCIENCE AND TECHNOLOGY INDUSTRIAL
PARK WUXI JIANGSU PROVINCE CHINA

申请人公司名称 : 无锡荣迈工程塑料有限公司
江苏省无锡市锡山经济开发区私营科技工业园 A 区 11-12

DATE OF SUBMISSION : July 21, 2011
样品收取日期 : 2011 年 7 月 21 日

TEST PERIOD : July 21, 2011 to July 27, 2011
所需工作周期 : 2011 年 7 月 21 日至 2011 年 7 月 27 日

NO. OF WORKING DAY(S) : 5
所需工作日 : 5

SAMPLE DESCRIPTION : One (1) received sample stated to be 团状模塑料(gray plastic)
样品描述 : Style No.: FTI400(灰色)

TESTED ITEM 1 : Gray plastic
测试项目 1

SUMMARY OF TEST RESULTS 测试结果摘要

TEST REQUESTED 测试项目	PASS 通过	FAIL 不通过
Restriction of Hazardous Substances Directive (RoHS), 2002/95/EC 有关欧洲针对电子产品的指令(电子电器禁用某些有害物质指令), 2002/95/EC	√	

REMARK

备注

If there are questions or concerns on this report, please contact the following persons:

若有任何疑问或咨询, 可通过下述联络方式与我们联络

General enquiry and invoicing

其他问题

顾晶/许祥晖 小姐 Ms. Michelle Gu/Lucy Xu

(021) 24166888*6837/6842

Michelle.gu@cn.bureauveritas.com/ Lucy.xu @cn.bureauveritas.com

Technical enquiry

技术问题

余克刚/郭晔轩 先生 Mr. Gorden.Yu/ Kevin Guo

(021) 24166888*6860/6856

Gorden.Yu@cn.bureauveritas.com/ Kevin.guo@cn.bureauveritas.com

BUREAU VERITAS

CONSUMER PRODUCTS SERVICES DIVISION (SHANGHAI)

必维国际检验集团-必维申美商品检测(上海)有限公司

PREPARED BY : _____ Zero

制定:


郭晔轩 Kevin Guo
电子电器分析部实验室经理
Electrical & Electronic Analytical LABORATORY MANAGER

RW/2011



LAB NO. 报告号 : (6611)202-0652
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Photo of the Submitted Sample
递交样品照片





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LAB NO. 报告号 : (6611)202-0652
DATE 日期 : July 27, 2011
PAGE 页码 : 3 OF 7

TEST RESULT 测试结果

Restriction of Hazardous Substances Directive (RoHS), 2002/95/EC
有关欧洲针对电子产品的指令(电子电器禁用某些有害物质指令), 2002/95/EC

Compounds 化合物	Tested item 测试项目 (mg/kg)		RoHS' Limits RoHS' 建议最高界限
	1		(mg/kg)
Lead 铅 (Pb)	183		1000
Mercury 汞 (Hg)	ND		1000
Cadmium 镉 (Cd)	ND		100
Chromium VI 六价铬 (Cr VI)	ND		1000
Polybrominated Biphenyls 多溴联苯 (PBBs):			
Bromobiphenyls 一溴联苯	ND		/
Dibromobiphenyls 二溴联苯	ND		
Tribromobiphenyls 三溴联苯	ND		
Tetrabromobiphenyls 四溴联苯	ND		
Pentabromobiphenyls 五溴联苯	ND		
Hexabromobiphenyls 六溴联苯	ND		
Heptabromobiphenyls 七溴联苯	ND		
Octabromobiphenyls 八溴联苯	ND		
Nonabromobiphenyls 九溴联苯	ND		
Decabromobiphenyl 十溴联苯	ND		
Sum of PBBs 多溴联苯总和	ND		
Polybrominated Diphenyl Ethers 多溴联苯醚 (PBDEs):			
Bromodiphenyl ethers 一溴联苯醚	ND		/
Dibromodiphenyl ethers 二溴联苯醚	ND		
Tribromodiphenyl ethers 三溴联苯醚	ND		
Tetrabromodiphenyl ethers 四溴联苯醚	ND		
Pentabromodiphenyl ethers 五溴联苯醚	ND		
Hexabromodiphenyl ethers 六溴联苯醚	ND		
Heptabromodiphenyl ethers 七溴联苯醚	ND		
Octabromodiphenyl ethers 八溴联苯醚	ND		
Nonabromodiphenyl ethers 九溴联苯醚	ND		
Decabromodiphenyl ether 十溴联苯醚	ND		
Sum of PBDEs 多溴联苯醚总和	ND		

Tested Item 测试项目	Conclusion 结论
1) Gray plastic	PASS 通过



Note / 注释:

Detection limits for regulated substances and limit of RoHS (in mg/kg) reference to 2002/95/EC

Regulated Substances 受限物质	Detection limit 检测限	RoHS' Limit (mg/kg) RoHS' 建议最高界限
Pb 铅	2	1000
Hg 汞	2	1000
Cd 镉	2	100
Cr VI 六价铬	2	1000
PBBs 多溴联苯 Bromobiphenyls Dibromobiphenyls Tribromobiphenyls Tetrabromobiphenyls Pentabromobiphenyls Hexabromobiphenyls Heptabromobiphenyls Octabromobiphenyls Nonabromobiphenyls Decabromobiphenyl	5 (each)	1000 (sum)
PBDEs 多溴联苯醚 Bromodiphenyl ethers Dibromodiphenyl ethers Tribromodiphenyl ethers Tetrabromodiphenyl ethers Pentabromodiphenyl ethers Hexabromodiphenyl ethers Heptabromodiphenyl ethers Octabromodiphenyl ethers Nonabromodiphenyl ethers Decabromodiphenyl ether	5 (each)	1000 (sum)

mg/kg= ppm 百万分之一 <= less than 少于 ND = not detected 不被检出 NA = not applicable 不适用
 Negative = 阴性 Positive = 阳性 NR = not requested 没有要求
 Pb = Lead 铅 Hg = Mercury 汞 Cd = Cadmium 镉 Cr = Chromium 铬
 Br = Bromine 溴 PBBs = Polybrominated Biphenyls 多溴联苯 PBDEs = Polybrominated Diphenyl Ethers 多溴联苯醚

Test Method / 测试方法:

Wet Chemistry Tests – Reference to IEC 62321:2008, “Electrotechnical Products- Determination of Levels of Six Regulated Substances”: 湿化学方法 – 参照 IEC 62321:2008, 电子电器产品中六种受限物质浓度测定

- i. Lead (Pb) and Cadmium (Cd): The sample is comminuted and digested with acid mixtures. Pb/ Cd contents are determined with ICP-AES technique. (Chapter 8, 9 & 10)
 铅和镉: 先将样品粉碎, 然后用混酸消解。铅/镉的含量由等离子发射光谱仪测定 (第 8, 9 和 10 章)。
- ii. Mercury (Hg): The sample is comminuted and digested with acid mixtures. Hg content is determined with ICP-AES, ICP-MS or AAS-VGA technique. (Chapter 7)
 汞: 先将样品粉碎, 然后用混酸消解。汞含量由离子发射光谱仪, 或者原子吸收分光光度计-氢化物发生装置测定。(第 7 章)
- iii. Chromium (VI) (Cr VI) 六价铬:
 - A. Metal: Qualitative method for the presence of hexavalent chromium on metal surface on "Test for the presence of Hexavalent Chromium (Cr (VI)) in colourless and coloured corrosion-protection coatings on metals". The presence of hexavalent chromium is indicated by the formation of a red to violet color. The method is applied in turn to 1) untreated surface; 2) surface got by gently rubbing to scratch possibly reduced chromate surface but without completely removing the whole coating layer; 3) surface got by forcibly scratching into the deeper layers, even reaching the substrate. The sample is further verified by boiling water extraction method if the result of spot test shows ahead is negative or uncertain. (Annex B)
 金属: 金属表面六价铬存在的定性方法“金属表面无色和有腐蚀防护涂层中六价铬 (Cr VI) 的测试”。测试颜色呈红一紫色, 则表明六价铬的存在。该方法适用于 1) 未磨损过的表面; 2) 轻微磨损过的表面, 以去除可能被还原的铬酸盐表层, 但不去除整个镀层; 3) 用力磨损的镀层表面, 甚至于基材表面。如果以上点测试结果呈阴性或无法确定, 则用沸水萃取方法作进一步确认。(附录 B)
 - B. Plastics & Electronics: The sample is comminuted and digested with alkaline mixtures. Chromium VI content is determined with UV-VIS spectroscopic technique. (Annex C)
 塑料和电子器件: 先将样品粉碎, 然后用混碱消解。六价铬含量由紫外可见分光光度计测定。(附录 C)
- iv. PBBs and PBDEs: The sample extracted by appropriate solvent is used for extraction and quantified GC-MS. (Annex A)
 多溴联苯和多溴联苯醚: 将样品用合适溶液进行提取, 再由气相色谱-质谱联用仪测定。(附录 A)

Remark / 备注:

1. For Chromium VI of a metal composite sample by wet chemistry, each individual metal component was tested.
 湿化学方法测试复合金属样品中六价铬时, 每一个金属部分均被测试。
2. Negative means hexavalent chromium on the tested areas does not be detected at the time of testing.
 阴性结果表示测试时测试表面六价铬未被检出。
3. Positive means the presence of hexavalent chromium on the tested area. If the test result is positive, that means the Cr(VI) concentration detected in the spot-test solution is equal to or greater than 1 mg/kg or if use boiling-water extraction, the concentration is equal to or greater than 0.02mg/kg/50cm². However, it shall not be interpreted as the Cr(VI) concentration in the coating layer of the sample and should not be used as a method detection limit for this qualitative test.
 阳性结果表示测试表面存在六价铬。如果测试结果呈阳性, 说明在点测试溶液中六价铬的浓度等于或大于 1mg/kg, 或用水 煮沸时六价铬的浓度等于或大于 0.02mg/kg/50cm²。但这不应当作为样品镀层中六价铬的浓度, 也不应当用作方法检出限, 这只是一种定性的测试方法。



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4. The results of lead, Cadmium, Mercury, PBB and PBDE of the tested item(s) meet the requirement of the EU directive 2002/95/EC(RoHS); and for the metallic sample with corrosion protection coating, the exact hexavalent chromium concentration of the surface coating cannot be determined by this qualitative test method (see remark 2 ahead) directly; so whether the tested item(s) meet(s) the EU directive RoHS or not, further confirmation and analysis should be done.

检测项目中铅,镉,汞,多溴联苯和多溴联苯醚的含量符合欧盟 RoHS 限量要求.对有腐蚀防护镀层的金属样品,镀层表面的六价铬准确含量若无通过此定性方法确定;若需确定是否符合欧盟 RoHS,需要进一步确认和分析。

5. The result relates only to the tested item. The report shall not be reproduced except full without the written approval of the testing laboratory. Parameters which are not covered by the lab's testing scope are subcontracted to laboratories with government approval. The accreditation relates to competences given in the accreditation certificate.

测试结果仅代表被测样品。未经实验室书面许可，此报告不可被复制。对于本实验室未能涵盖的测试项目，实验室可以分包给其它政府承认的实验室。分包实验室的能力验证会在验证证书中注明。

END

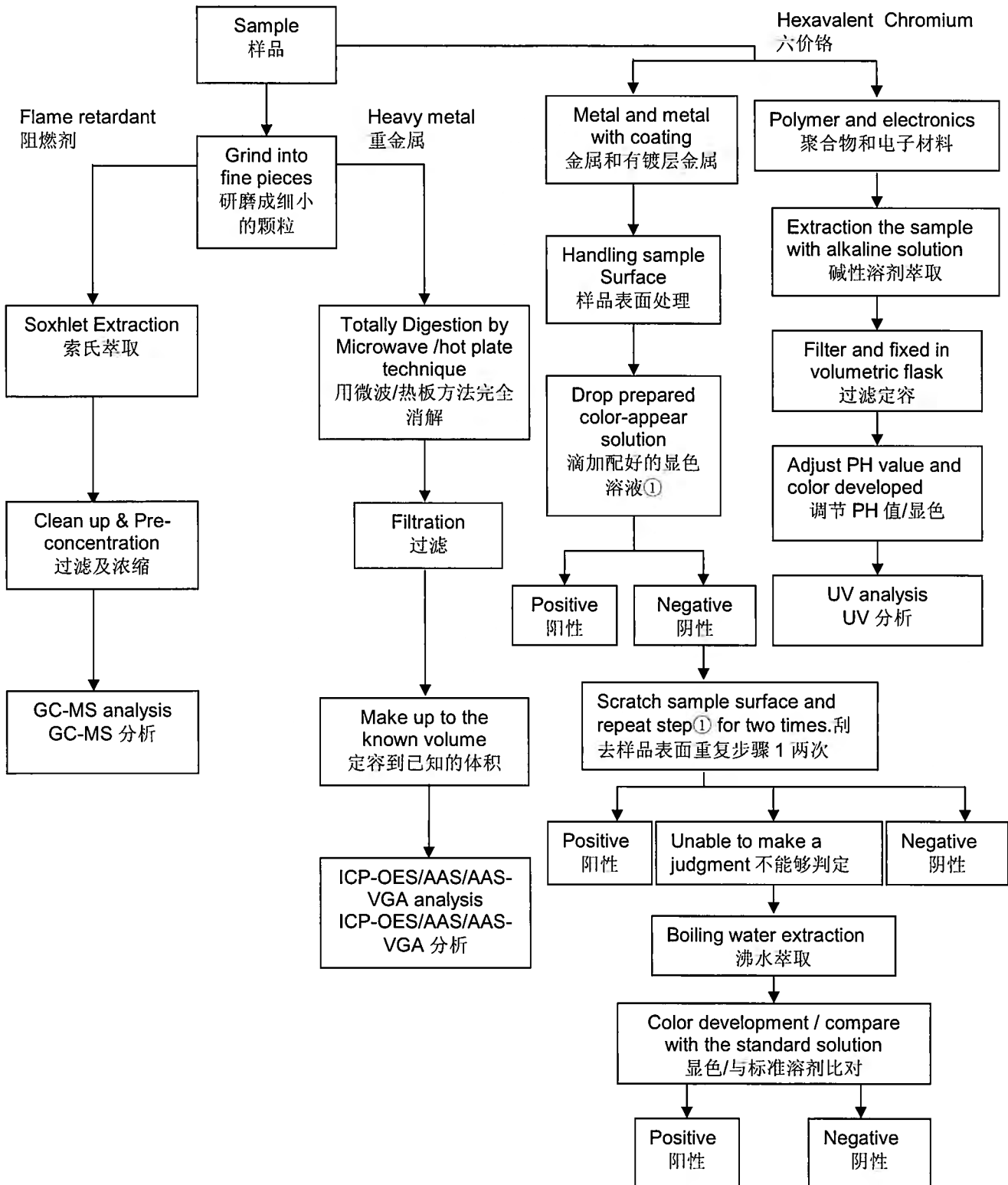


BUREAU VERITAS

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ANNEX-List of Exempted Specific Applications in RoHS Directive (2010/571/EU).

Table with 3 columns: Exemption, Scope and dates of applicability. Rows include exemptions for mercury in fluorescent lamps, lead in various applications, and cadmium in electrical contacts, among others.

**APPENDIX****附录****Test Procedures Flow Chart for the determination of RoHS (total heavy metals, Hexavalent Chromium and flame retardants)**



Test Report

Number : TWNC00226898

Applicant: Littelfuse Philippines Inc.
LIMA Technology Center, Lipa City,
Malvar, Batangas

Date : Oct 07, 2011

Sample Description:

One (1) group of submitted samples said to be :

Part Description : PC 2407 (Bayer)

Date Sample Received : Oct 04, 2011

Date Test Started : Oct 05, 2011

Test Conducted :

As requested by the applicant, for details please refer to attached pages.

Authorized By:

On Behalf Of Intertek Testing Services
Taiwan Limited



K. Y. Liang
Director

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approval of the laboratory.

Intertek Testing Services Taiwan Ltd.

8F., No. 423, Ruiguang Rd., Neihu District, Taipei 114, Taiwan, R.O.C.

全國公證檢驗股份有限公司

114 台北市內湖區瑞光路 423 號 8 樓

Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2400 · 6602-2401



Number : TWNC00226898

Test Conducted

(I) Test Result Summary :

Test Item	Result (ppm)
	Transparent Plastic
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content	ND
Polybrominated Biphenyls (PBBs)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)	
Monobrominated Diphenyl Ethers (MonoBDE)	ND
Dibrominated Diphenyl Ethers (DiBDE)	ND
Tribrominated Diphenyl Ethers (TriBDE)	ND
Tetrabrominated Diphenyl Ethers (TetraBDE)	ND
Pentabrominated Diphenyl Ethers (PentaBDE)	ND
Hexabrominated Diphenyl Ethers (HexaBDE)	ND
Heptabrominated Diphenyl Ethers (HeptaBDE)	ND
Octabrominated Diphenyl Ethers (OctaBDE)	ND
Nonabrominated Diphenyl Ethers (NonaBDE)	ND
Decabrominated Diphenyl Ether (DecaBDE)	ND
Halogen Content	
Fluorine (F)	ND
Chlorine (Cl)	ND
Bromine (Br)	ND
Iodine (I)	ND

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg
ND = Not detected

Responsibility of Chemist : Irene Chiou / Kevin Liu / Cathy Chen

Date Sample Received : Oct 04, 2011

Test Period : Oct 05, 2011 To Oct 07, 2011



Number : TWNC00226898

Test Conducted

(II) RoHS Requirement:

<u>Restricted Substances</u>	<u>Limits</u>
Cadmium (Cd) Content	0.01% (100ppm)
Lead (Pb) Content	0.1% (1000ppm)
Mercury (Hg) Content	0.1% (1000ppm)
Chromium VI (Cr ⁶⁺) Content	0.1% (1000ppm)
Polybrominated Biphenyls (PBBs)	0.1% (1000ppm)
Polybrominated Diphenyl Ehters (PBDEs)	0.1% (1000ppm)

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

(III) Test Method:

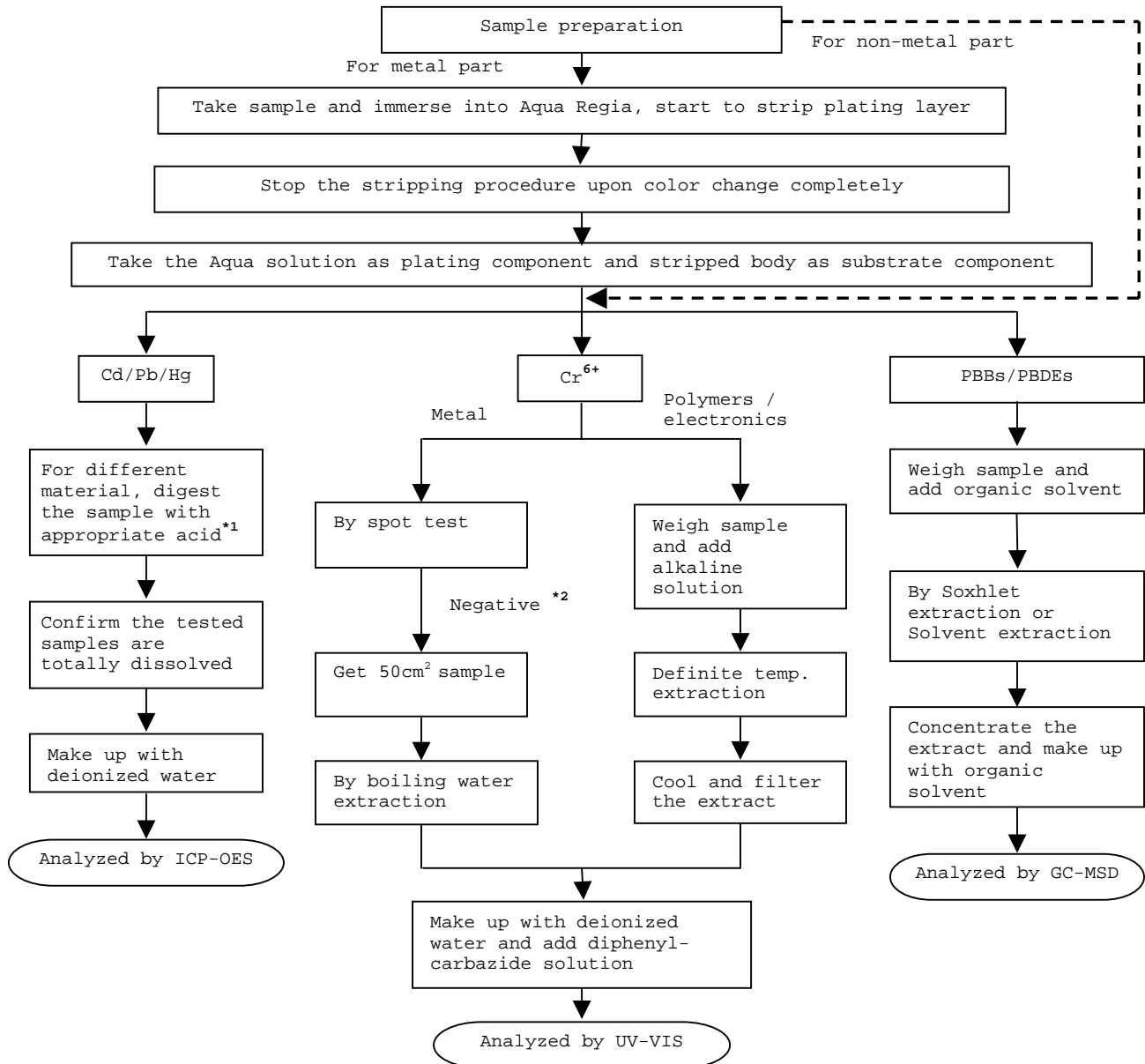
<u>Test Item</u>	<u>Test Method</u>	<u>Reporting Limit</u>
Cadmium (Cd) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Lead (Pb) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Mercury (Hg) content	With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Chromium VI (Cr ⁶⁺) content	With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.	1 ppm
Polybrominated Biphenyls (PBBs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	5 ppm
Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	5 ppm
Halogen Content	With reference to EN 14582:2007 by calorimetric bomb with oxygen and determined by ion chromatography	50 ppm

Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

Test for Cd/Pb/Hg/Chromium (VI)/PBBS/PBDES Contents
 Reference Standard: IEC 62321 edition 1.0:2008



Remarks:

*1: List of Appropriate Acid:

Material	Acid Added for Digestion
Polymers	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
Metals	HNO ₃ , HCl, HF
Electronics	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

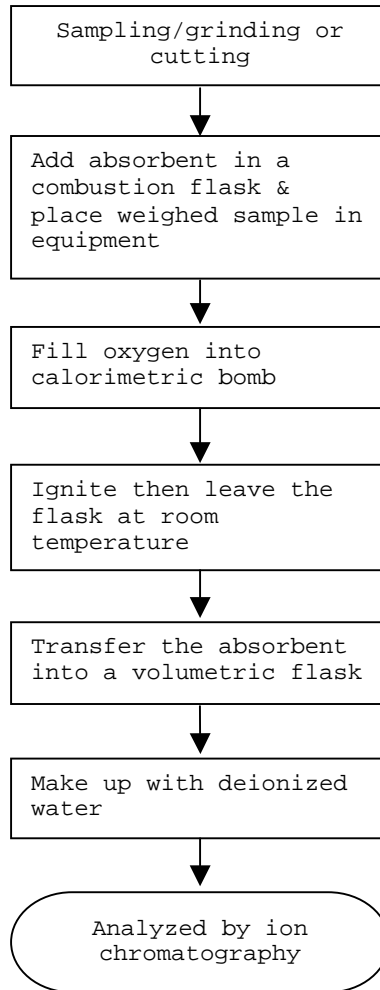
*2: If the result of spot test is positive, Chromium VI would be determined as detected.

Test Conducted

(IV) Measurement Flowchart:

Test for Halogen Content

Reference Standard : EN 14582

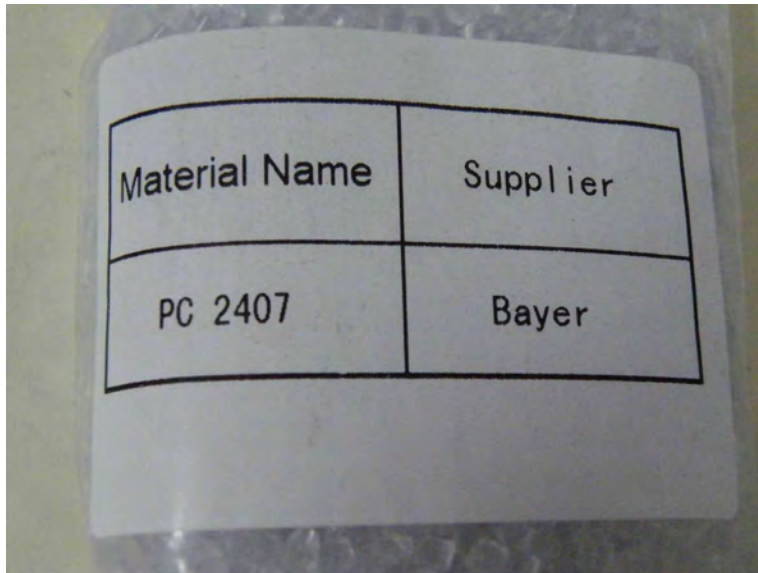


End of Report

Test Conducted

Number : TWNC00226898

Photo





Test Report

Number : TWNC00216857

Applicant: Littelfuse Inc.
LIMA Technology Center, Lipa City,
Malvar, Batangas

Date : Jul 25, 2011

Sample Description:

One (1) group of submitted samples said to be :
Part Description : Aluminum Material
Date Sample Received : Jul 19, 2011
Date Test Started : Jul 19, 2011

Test Conducted :

As requested by the applicant, for details please refer to attached pages.

Authorized By:
On Behalf Of Intertek Testing Services
Taiwan Limited



K. Y. Liang
Director

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Number : TWNC00216857

Test Conducted

(I) Test Result Summary :

<u>Test Item</u>	<u>Result (ppm)</u>
	<u>Silvery Metal</u>
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content (mg/kg with 50cm ²)	Negative (< 0.02)

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg
ND = Not detected
< = Less than
mg/kg with 50cm² = milligram per kilogram with 50 square centimetre
Negative = A negative test result indicated positive observation was not found at the time of Test.

Responsibility of Chemist : Irene Chiou / Kevin Liu / Cathy Chen

Date Sample Received : Jul 19, 2011
Test Period : Jul 19, 2011 To Jul 25, 2011

(II) RoHS Requirement:

<u>Restricted Substances</u>	<u>Limits</u>
Cadmium (Cd) Content	0.01% (100ppm)
Lead (Pb) Content	0.1% (1000ppm)
Mercury (Hg) Content	0.1% (1000ppm)
Chromium VI (Cr ⁶⁺) Content	0.1% (1000ppm)

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

Test Conducted

(III) Test Method:

Test Item	Test Method	Reporting Limit
Cadmium (Cd) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Lead (Pb) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Mercury (Hg) content	With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Chromium VI (Cr ⁶⁺) content	With reference to IEC 62321 edition 1.0:2008 in annex B, by boiling water extraction and determined by UV-Vis spectrophotometer.	0.02 mg/kg with 50cm ²

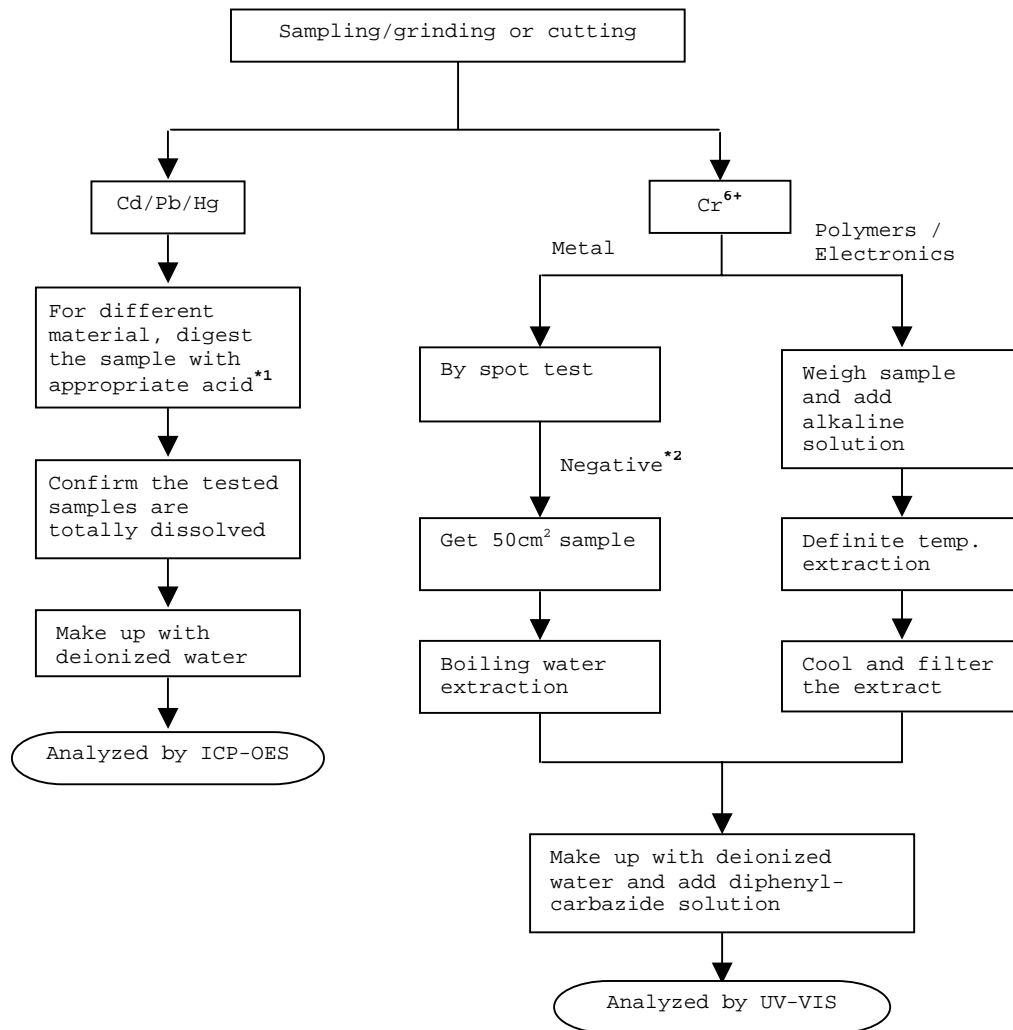
Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)

Reference Standard : IEC 62321 edition 1.0:2008



Remarks:

*1: List Of Appropriate Acid :

Material	Acid Added For Digestion
Polymers	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
Metals	HNO ₃ , HCl, HF
Electronics	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

*2: If the result of spot test is positive, Chromium VI would be determined as detected.

End of Report

Test Conducted

Photo





Test Report

Number : TWNC00216854

Applicant: Littelfuse Inc.
LIMA Technology Center, Lipa City,
Malvar, Batangas.

Date : Jul 27, 2011

Sample Description:

One (1) group of submitted samples said to be :

Part Description : Steel
Date Sample Received : Jul 19, 2011
Date Test Started : Jul 19, 2011

Test Conducted :

As requested by the applicant, for details please refer to attached pages.

Authorized By:
On Behalf Of Intertek Testing Services
Taiwan Limited



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Director

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Intertek Testing Services Taiwan Ltd.

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全國公證檢驗股份有限公司

114 台北市內湖區瑞光路 423 號 8 樓

Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2400 · 6602-2401



Number : TWNC00216854

Test Conducted

(I) Test Result Summary :

<u>Test Item</u>	<u>Result (ppm)</u>	
	<u>(1)</u>	<u>(2)</u>
Heavy Metal		
Cadmium (Cd) content	ND	ND
Lead (Pb) content	ND	ND
Mercury (Hg) content	ND	ND
Chromium VI (Cr ⁶⁺) content (mg/kg with 50cm ²)	Negative (< 0.02)	Negative (< 0.02)

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg
ND = Not detected
< = Less than
mg/kg with 50cm² = milligram per kilogram with 50 square centimetre
Negative = A negative test result indicated positive observation was not found at the time of Test.
= Due to the insufficient sample area, reduced total sample surface of 10 cm² was used and the dilution factor was adjusted accordingly.

Tested Components

- (1) Black Plating Layer
- (2) Silvery Metal Base Material

Responsibility of Chemist : Irene Chiou / Kevin Liu / Cathy Chen

Date Sample Received : Jul 19, 2011
Test Period : Jul 19, 2011 To Jul 27, 2011

(II) RoHS Requirement:

<u>Restricted Substances</u>	<u>Limits</u>
Cadmium (Cd) Content	0.01% (100ppm)
Lead (Pb) Content	0.1% (1000ppm)
Mercury (Hg) Content	0.1% (1000ppm)
Chromium VI (Cr ⁶⁺) Content	0.1% (1000ppm)

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.



Number : TWNC00216854

Test Conducted

(III) Test Method:

<u>Test Item</u>	<u>Test Method</u>	<u>Reporting Limit</u>
Cadmium (Cd) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Lead (Pb) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Mercury (Hg) content	With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Chromium VI (Cr ⁶⁺) content	With reference to IEC 62321 edition 1.0:2008 in annex B, by boiling water extraction and determined by UV-Vis spectrophotometer.	0.02 mg/kg with 50cm ²

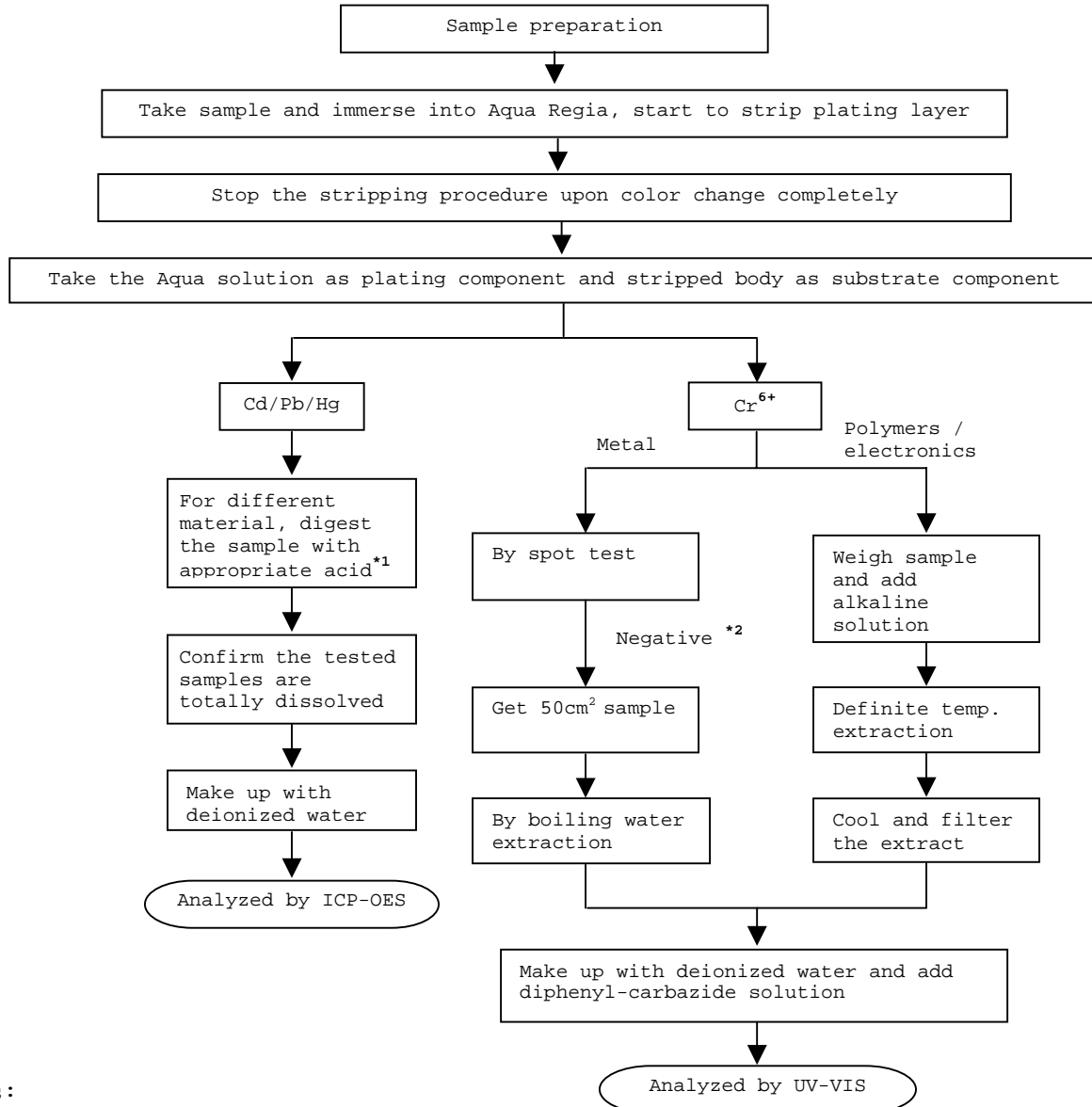
Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

Test for Cd/Pb/Hg/Chromium (VI)

Reference Standard : IEC 62321 edition 1.0:2008



Remarks:

*1: List of Appropriate Acid:

Material	Acid Added for Digestion
Polymers	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
Metals	HNO ₃ , HCl, HF
Electronics	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

*2: If the result of spot test is positive, Chromium VI would be determined as detected.

End of Report

Test Conducted

Photo





Test Report

Number : TWNC00216856

Applicant: Littelfuse Inc.
LIMA Technology Center, Lipa City,
Malvar, Batangas

Date : Jul 25, 2011

Sample Description:

One (1) group of submitted samples said to be :
Part Description : Copper Alloy
Date Sample Received : Jul 19, 2011
Date Test Started : Jul 20, 2011

Test Conducted :

As requested by the applicant, for details please refer to attached pages.

Authorized By:
On Behalf Of Intertek Testing Services
Taiwan Limited



K. Y. Liang
Director

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Number : TWNC00216856

Test Conducted

(I) Test Result Summary :

<u>Test Item</u>	<u>Result (ppm)</u>
	<u>Coppery Metal</u>
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	46
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content (mg/kg with 50cm ²)	Negative(< 0.02)(#)

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg
ND = Not detected
< = Less than
mg/kg with 50cm² = milligram per kilogram with 50 square centimetre
Negative = A negative test result indicated positive observation was not found at the time of Test.
= Due to the insufficient sample area, reduced total sample surface of 10 cm² was used and the dilution factor was adjusted accordingly.

Responsibility of Chemist : Irene Chiou / Kevin Liu / Cathy Chen

Date Sample Received : Jul 19, 2011

Test Period : Jul 20, 2011 To Jul 25, 2011

(II) RoHS Requirement:

<u>Restricted Substances</u>	<u>Limits</u>
Cadmium (Cd) Content	0.01% (100ppm)
Lead (Pb) Content	0.1% (1000ppm)
Mercury (Hg) Content	0.1% (1000ppm)
Chromium VI (Cr ⁶⁺) Content	0.1% (1000ppm)

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

Test Conducted

(III) Test Method:

Test Item	Test Method	Reporting Limit
Cadmium (Cd) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Lead (Pb) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Mercury (Hg) content	With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Chromium VI (Cr ⁶⁺) content	With reference to IEC 62321 edition 1.0:2008 in annex B, by boiling water extraction and determined by UV-Vis spectrophotometer.	0.02 mg/kg with 50cm ²

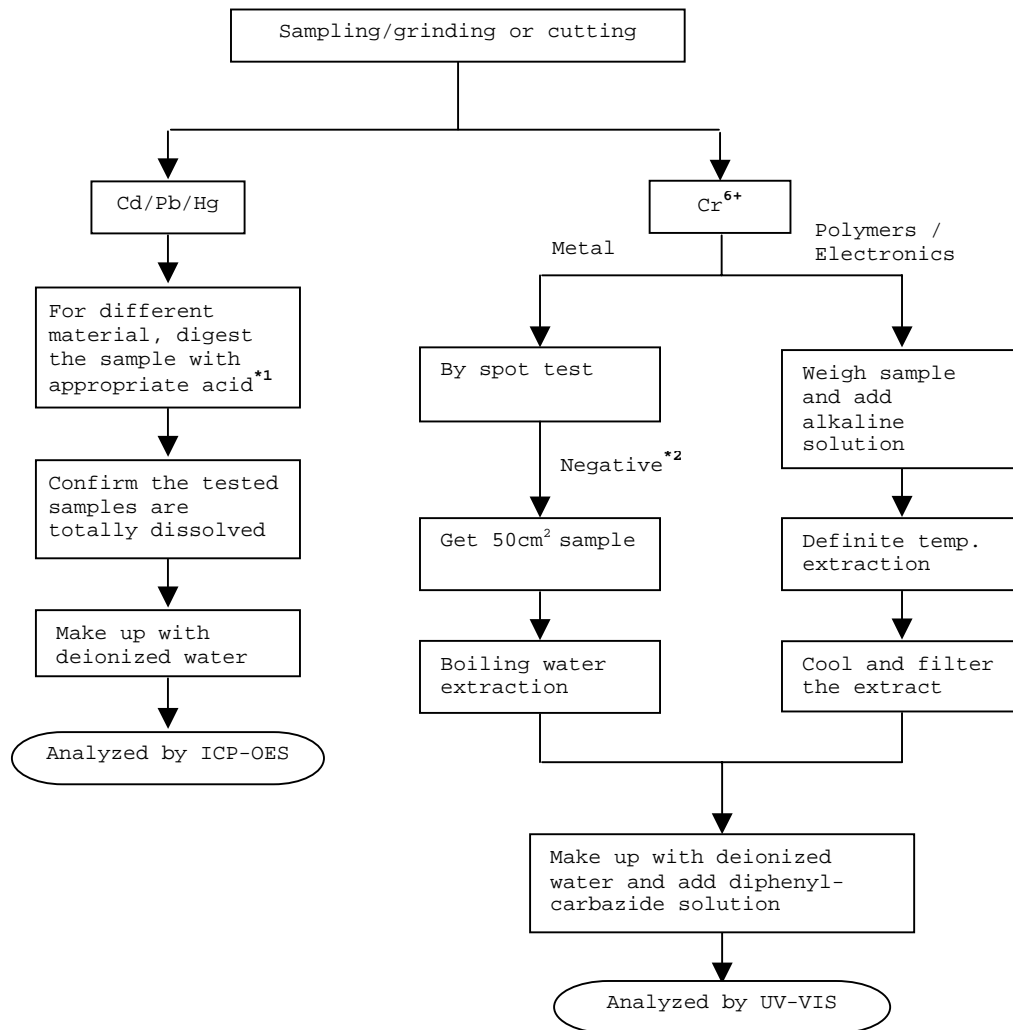
Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)

Reference Standard : IEC 62321 edition 1.0:2008



Remarks:

*1: List Of Appropriate Acid :

Material	Acid Added For Digestion
Polymers	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
Metals	HNO ₃ , HCl, HF
Electronics	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

*2: If the result of spot test is positive, Chromium VI would be determined as detected.

End of Report

Test Conducted

Photo





Test Report

Number : TWNC00238069

Applicant: Littelfuse, Philippines Inc.
LIMA Technology Center, Lipa City,
Malvar, Batangas

Date : Dec 27, 2011

Sample Description:

One (1) group of submitted samples said to be :

Part Description : Metal
Part Number : 65Mn
Date Sample Received : Dec 22, 2011
Date Test Started : Dec 23, 2011

Test Conducted :

As requested by the applicant, for details please refer to attached pages.

Authorized By:
On Behalf Of Intertek Testing Services
Taiwan Limited



K. Y. Liang
Director

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Number : TWNC00238069

Test Conducted

(I) Test Result Summary :

<u>Test Item</u>	<u>Result (ppm)</u>	
	<u>(1)</u>	<u>(2)</u>
Heavy Metal		
Cadmium (Cd) content	ND	ND
Lead (Pb) content	ND	ND
Mercury (Hg) content	ND	ND
Chromium VI (Cr ⁶⁺) content (mg/kg with 50cm ²)	Negative (< 0.02)	Negative (< 0.02)

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg
ND = Not detected
< = Less than
mg/kg with 50cm² = milligram per kilogram with 50 square centimetre
Negative = A negative test result indicated positive observation was not found at the time of Test.

Tested Components

- (1) Silvery Metal Base Material
- (2) Silvery Plating Layer

Responsibility of Chemist : Irene Chiou / Kevin Liu

Date Sample Received : Dec 22, 2011

Test Period : Dec 23, 2011 To Dec 26, 2011

(II) RoHS Requirement:

<u>Restricted Substances</u>	<u>Limits</u>
Cadmium (Cd) Content	0.01% (100ppm)
Lead (Pb) Content	0.1% (1000ppm)
Mercury (Hg) Content	0.1% (1000ppm)
Chromium VI (Cr ⁶⁺) Content	0.1% (1000ppm)

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.



Number : TWNC00238069

Test Conducted

(III) Test Method:

<u>Test Item</u>	<u>Test Method</u>	<u>Reporting Limit</u>
Cadmium (Cd) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Lead (Pb) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Mercury (Hg) content	With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Chromium VI (Cr ⁶⁺) content	With reference to IEC 62321 edition 1.0:2008 in annex B, by boiling water extraction and determined by UV-Vis Spectrophotometer.	0.02 mg/kg with 50cm ²

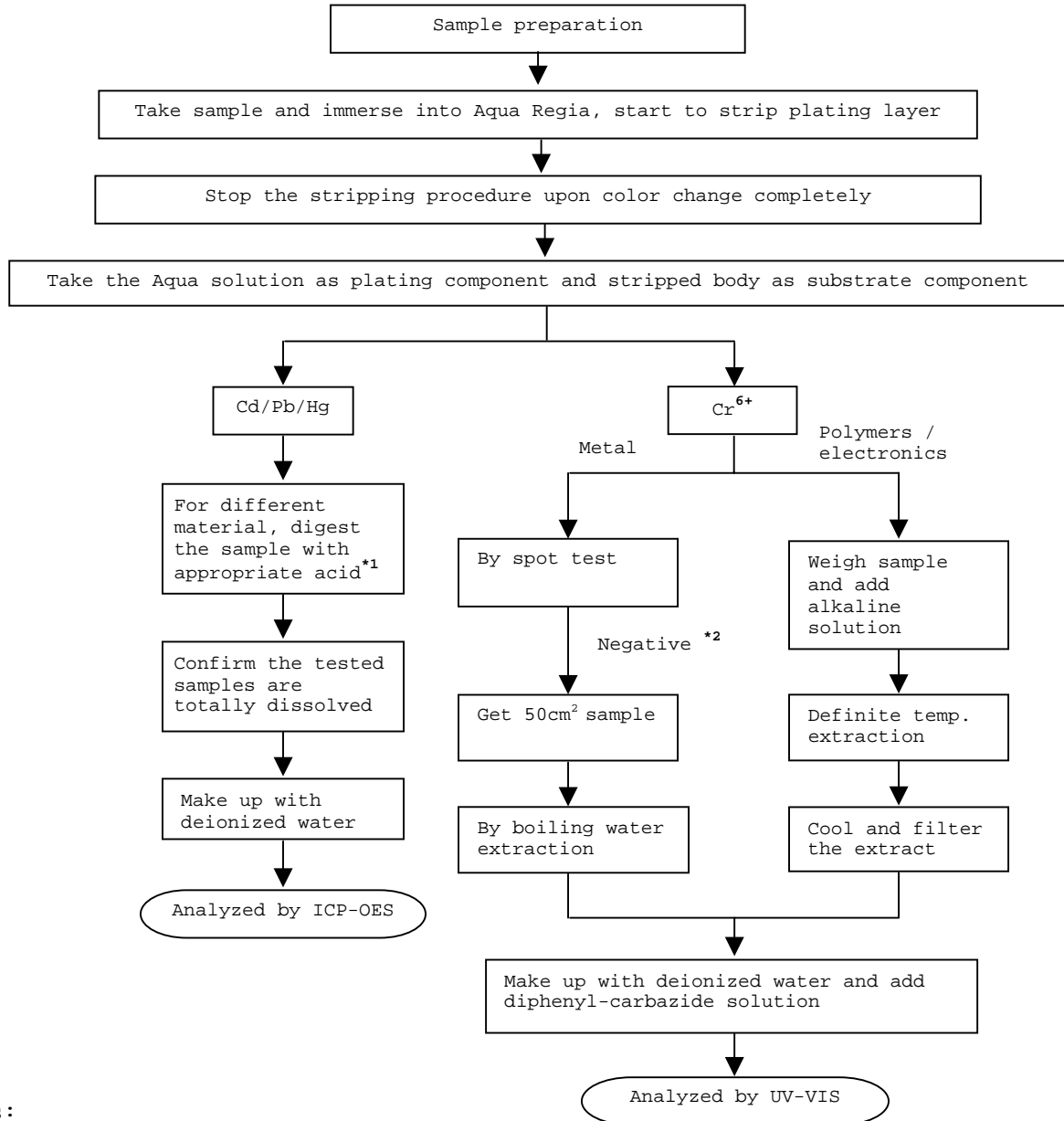
Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

Test for Cd/Pb/Hg/Chromium (VI)

Reference Standard : IEC 62321 edition 1.0:2008



Remarks:

*1: List of Appropriate Acid:

Material	Acid Added for Digestion
Polymers	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
Metals	HNO ₃ , HCl, HF
Electronics	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

*2: If the result of spot test is positive, Chromium VI would be determined as detected.

End of Report

Test Conducted

Photo





Test Report

Number : TWNC00238070

Applicant: Littelfuse, Philippines Inc.
LIMA Technology Center, Lipa City,
Malvar, Batangas

Date : Dec 27, 2011

Sample Description:

One (1) group of submitted samples said to be :
Part Description : Neon Lamp sub-assay
Date Sample Received : Dec 22, 2011
Date Test Started : Dec 22, 2011

Test Conducted :

As requested by the applicant, for details please refer to attached pages.

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Taiwan Limited



K. Y. Liang
Director

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Number : TWNC00238070

Test Conducted

(I) Test Result Summary :

Test Item	Result (ppm)	
	(1)	(2)
Heavy Metal		
Cadmium (Cd) content	ND	ND
Lead (Pb) content	78	ND
Mercury (Hg) content	ND	ND
Chromium VI (Cr ⁶⁺) content (for non-metal material)	ND	ND
Chromium VI (Cr ⁶⁺) content (by boiling water extraction on metal)(mg/kg with 50cm ²)	--	--
Polybrominated Biphenyls (PBBs)		
Monobrominated Biphenyls (MonoBB)	ND	ND
Dibrominated Biphenyls (DiBB)	ND	ND
Tribrominated Biphenyls (TriBB)	ND	ND
Tetrabrominated Biphenyls (TetraBB)	ND	ND
Pentabrominated Biphenyls (PentaBB)	ND	ND
Hexabrominated Biphenyls (HexaBB)	ND	ND
Heptabrominated Biphenyls (HeptaBB)	ND	ND
Octabrominated Biphenyls (OctaBB)	ND	ND
Nonabrominated Biphenyls (NonaBB)	ND	ND
Decabrominated Biphenyl (DecaBB)	ND	ND
Polybrominated Diphenyl Ethers (PBDEs)		
Monobrominated Diphenyl Ethers (MonoBDE)	ND	ND
Dibrominated Diphenyl Ethers (DiBDE)	ND	ND
Tribrominated Diphenyl Ethers (TriBDE)	ND	ND
Tetrabrominated Diphenyl Ethers (TetraBDE)	ND	ND
Pentabrominated Diphenyl Ethers (PentaBDE)	ND	ND
Hexabrominated Diphenyl Ethers (HexaBDE)	ND	ND
Heptabrominated Diphenyl Ethers (HeptaBDE)	ND	ND
Octabrominated Diphenyl Ethers (OctaBDE)	ND	ND
Nonabrominated Diphenyl Ethers (NonaBDE)	ND	ND
Decabrominated Diphenyl Ether (DecaBDE)	ND	ND
Halogen Content		
Fluorine (F)	ND	ND
Chlorine (Cl)	ND	ND
Bromine (Br)	ND	ND
Iodine (I)	ND	ND
Phthalates		
Di(2-ethylhexyl) Phthalate (DEHP)	--	--
Dibutyl Phthalate (DBP)	--	--
Benzyl Butyl Phthalate (BBP)	--	--
Others		
Hexabromocyclododecane (HBCDD)	--	--



Number : TWNC00238070

Test Conducted

(I) Test Result Summary :

Test Item	Result (ppm)	
	(3)	(4)
Heavy Metal		
Cadmium (Cd) content	ND	ND
Lead (Pb) content	ND	ND
Mercury (Hg) content	ND	ND
Chromium VI (Cr ⁶⁺) content (for non-metal material)	ND	ND
Chromium VI (Cr ⁶⁺) content (by boiling water extraction on metal)(mg/kg with 50cm ²)	--	Negative (<0.02) (#)
Polybrominated Biphenyls (PBBs)		
Monobrominated Biphenyls (MonoBB)	ND	--
Dibrominated Biphenyls (DiBB)	ND	--
Tribrominated Biphenyls (TriBB)	ND	--
Tetrabrominated Biphenyls (TetraBB)	ND	--
Pentabrominated Biphenyls (PentaBB)	ND	--
Hexabrominated Biphenyls (HexaBB)	ND	--
Heptabrominated Biphenyls (HeptaBB)	ND	--
Octabrominated Biphenyls (OctaBB)	ND	--
Nonabrominated Biphenyls (NonaBB)	ND	--
Decabrominated Biphenyl (DecaBB)	ND	--
Polybrominated Diphenyl Ethers (PBDEs)		
Monobrominated Diphenyl Ethers (MonoBDE)	ND	--
Dibrominated Diphenyl Ethers (DiBDE)	ND	--
Tribrominated Diphenyl Ethers (TriBDE)	ND	--
Tetrabrominated Diphenyl Ethers (TetraBDE)	ND	--
Pentabrominated Diphenyl Ethers (PentaBDE)	ND	--
Hexabrominated Diphenyl Ethers (HexaBDE)	ND	--
Heptabrominated Diphenyl Ethers (HeptaBDE)	ND	--
Octabrominated Diphenyl Ethers (OctaBDE)	ND	--
Nonabrominated Diphenyl Ethers (NonaBDE)	ND	--
Decabrominated Diphenyl Ether (DecaBDE)	ND	--
Halogen Content		
Fluorine (F)	ND	--
Chlorine (Cl)	272199	--
Bromine (Br)	2257	--
Iodine (I)	ND	--



Number : TWNC00238070

Test Conducted

(I) Test Result Summary :

Test Item	Result (ppm)	
	(3)	(4)
Phthalates		
Di(2-ethylhexyl) Phthalate (DEHP)	ND	--
Dibutyl Phthalate (DBP)	ND	--
Benzyl Butyl Phthalate (BBP)	ND	--
Others		
Hexabromocyclododecane (HBCDD)	ND	--

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg
 ND = Not detected
 < = Less than
 mg/kg with 50cm² = milligram per kilogram with 50 square centimetre
 Negative = A negative test result indicated positive observation was not found at the time of Test.
 # = Due to the insufficient sample area, reduced total sample surface of 10 cm² was used and the dilution factor was adjusted accordingly.

Responsibility of Chemist : Irene Chiou / Kevin Liu / Cathy Chen

Date Sample Received : Dec 22, 2011
 Test Period : Dec 22, 2011 To Dec 27, 2011

(II) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd) Content	0.01% (100ppm)
Lead (Pb) Content	0.1% (1000ppm)
Mercury (Hg) Content	0.1% (1000ppm)
Chromium VI (Cr ⁶⁺) Content	0.1% (1000ppm)
Polybrominated Biphenyls (PBBs)	0.1% (1000ppm)
Polybrominated Diphenyl Ehters (PBDEs)	0.1% (1000ppm)

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.



Number : TWNC00238070

Test Conducted
(III) Test Method:

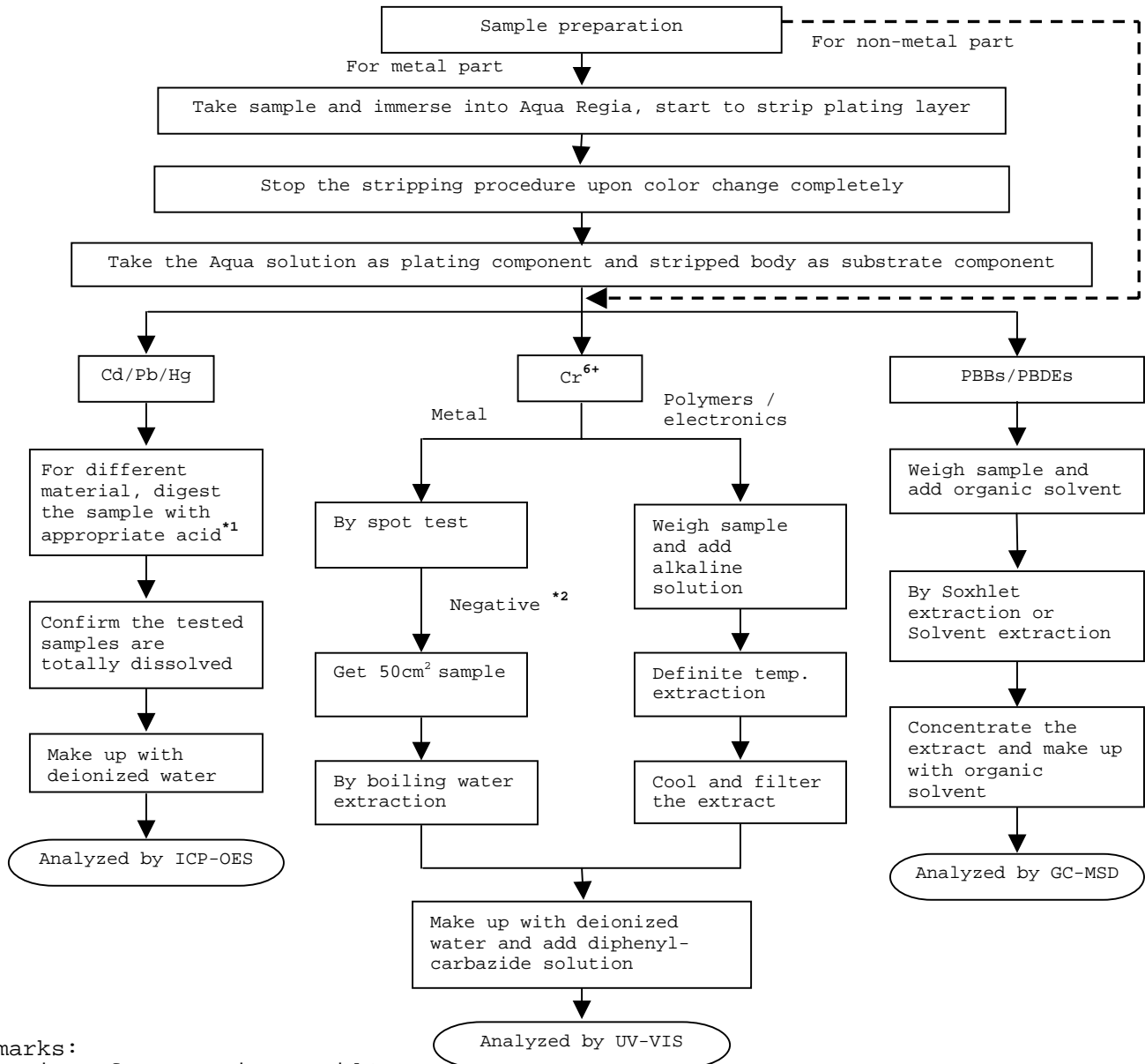
<u>Test Item</u>	<u>Test Method</u>	<u>Reporting Limit</u>
Cadmium (Cd) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Lead (Pb) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Mercury (Hg) content	With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Chromium VI (Cr ⁶⁺) content (for non-metal material)	With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.	1 ppm
Chromium VI (Cr ⁶⁺) content (by boiling water extraction on metal)(mg/kg with 50cm ²)	With reference to IEC 62321 edition 1.0:2008 in annex B, by boiling water extraction and determined by UV-Vis Spectrophotometer.	0.02 mg/kg with 50cm ²
Polybrominated Biphenyls (PBBs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary.	5 ppm
Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary.	5 ppm
Halogen Content	With reference to EN 14582:2007 by calorimetric bomb with oxygen and determined by Ion Chromatograph.	50 ppm
Phthalates	With reference to EN 14372: 2004, by solvent extraction and determined by GC-MSD	50 ppm
Hexabromocyclododecane (HBCDD)	With reference to USEPA 3540C, by solvent extraction and determined by GC-MSD	10 ppm

Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

Test for Cd/Pb/Hg/Chromium (VI)/PBBS/PBDES Contents
 Reference Standard: IEC 62321 edition 1.0:2008



Remarks:

*1: List of Appropriate Acid:

Material	Acid Added for Digestion
Polymers	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
Metals	HNO ₃ , HCl, HF
Electronics	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

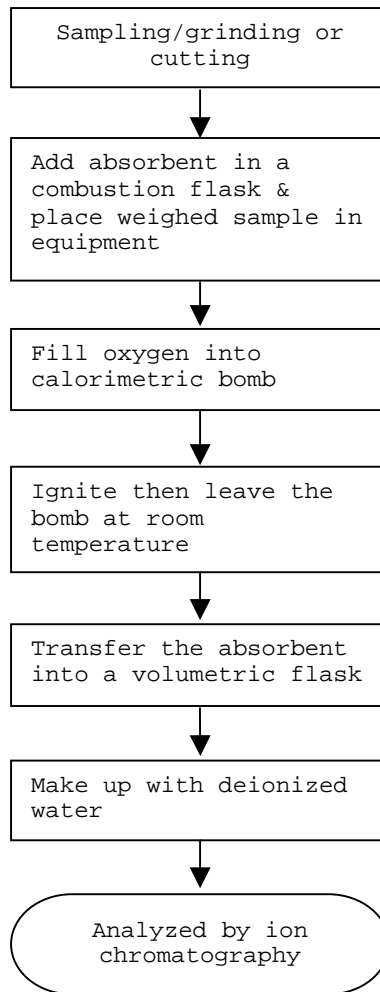
*2: If the result of spot test is positive, Chromium VI would be determined as detected.

Test Conducted

(IV) Measurement Flowchart:

Test for Halogen Content

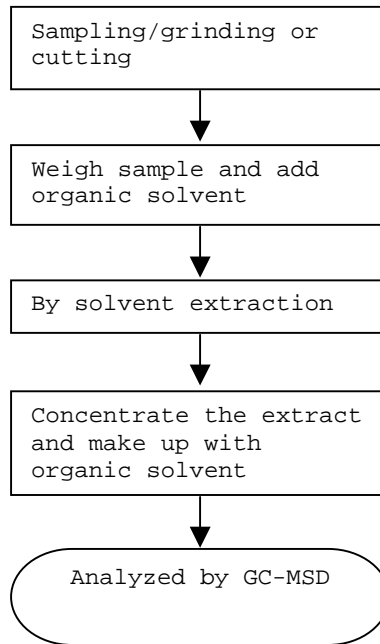
Reference Standard : EN 14582



Test Conducted

(IV) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004

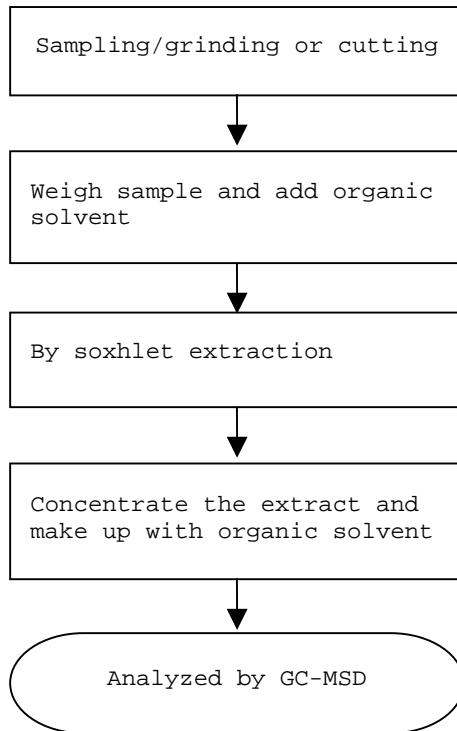


Test Conducted

(IV) Measurement Flowchart:

Test For Hexabromocyclododecane (HBCDD)

Reference Standard : USEPA 3540C





Number : TWNC00238070

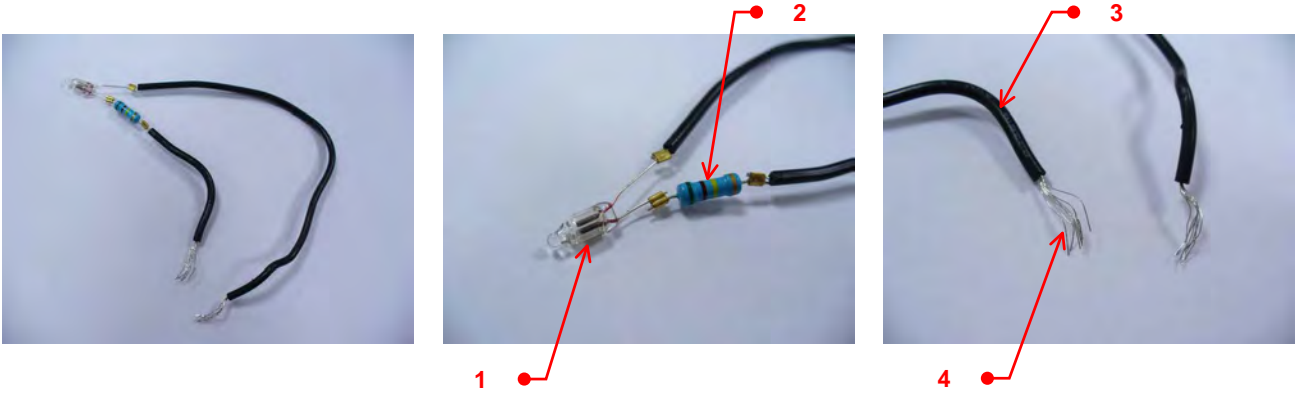
Tested Components:

- (1) Lamp (Mixed All Parts)
- (2) Blue Resistor With Golden/Yellow/Red/Green Printing (Mixed All Parts)
- (3) Black Cable Jacket With White Printing
- (4) Silvery Metal Wire

End of Report

Test Conducted

Photo





测试报告

No. SHAEC1103841401 日期: 2011年03月31日 第1页,共4页

乐清市精饰电镀厂
浙江省乐清市北白象镇象塔南路42号

以下测试之样品是由申请者所提供及确认: 镀锡层

SGS工作编号: SP11-008489 - SH
 型号: 配件
 样品接收日期: 2011年03月28日
 测试周期: 2011年03月28日 - 2011年03月31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, 测试结果与欧盟RoHS指令2002/95/EC以及后续修正指令的要求相符

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Fan Jingjie, JJ范晶捷

批准签署人

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 These conditions shall apply to all results shown in this test report refer only to the sample(s) tested.



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测试报告

No. SHAEC1103841401

日期: 2011年03月31日

第2页,共4页

测试结果:

样品部件外观描述:

样品编号	SGS样品ID	描述
1	SHA11-038414.001	银色金属

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2002/95/EC

测试方法:

参照IEC 62321:2008:

- (1) 用ICP-OES测定镉的含量.
- (2) 用ICP-OES测定铅的含量.
- (3) 用ICP-OES测定汞的含量.
- (4) 用点测试法/紫外-可见分光光度计比色法测定六价铬的含量.

测试项目

测试项目	限值	单位	MDL	001
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(CrVI)	-	-	◇	Negative

备注:

- (1) 最大允许限值引用自2002/95/EC RoHS指令和后续修正指令2005/618/EC.
- (2) ◇ 点测试法:

Negative = 镀层中未检测到六价铬, Positive = 镀层中检测到六价铬;

(当点测试结果为Negative或无法确定时,将采用沸水萃取法作进一步的结果验证.)

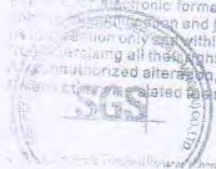
◇ 沸水萃取法:

Negative = 镀层中未检测到六价铬

Positive = 镀层中检测到六价铬; 表明50 cm²表面积的被测试样品的沸水萃取液中六价铬的浓度等于或大于0.02 mg/kg.

针对金属表面的防腐涂层: 由于未获知样品的存储条件和生产日期,样品的六价铬测试结果仅代表测试时样品的状态.

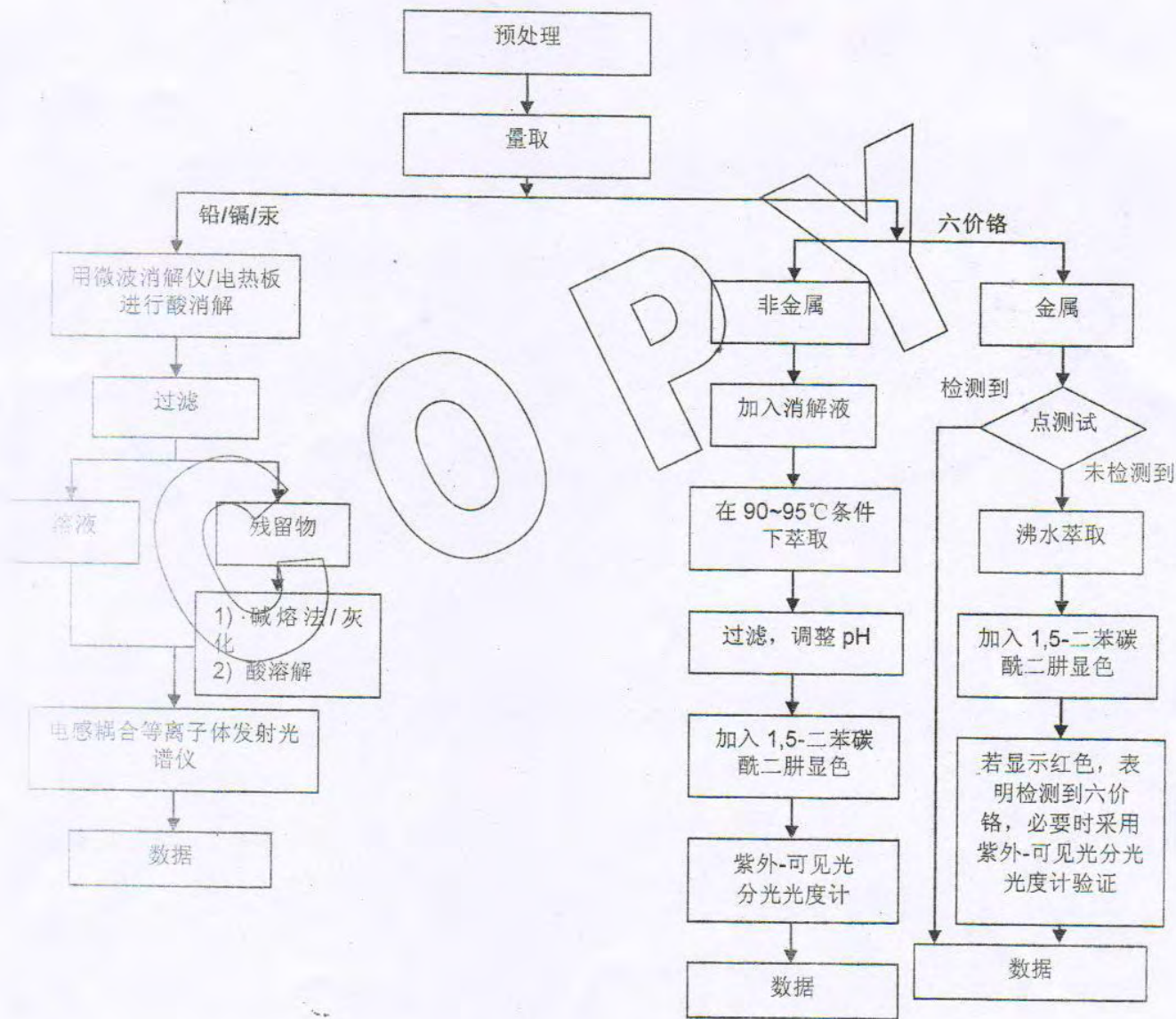
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附件

RoHS 测试流程图

- 1) 分析人员: 肖飞/徐双/赵旭东
- 2) 项目负责人: 张春华/徐亮
- 3) 样品按照下述流程被完全消解 (六价铬测试除外)



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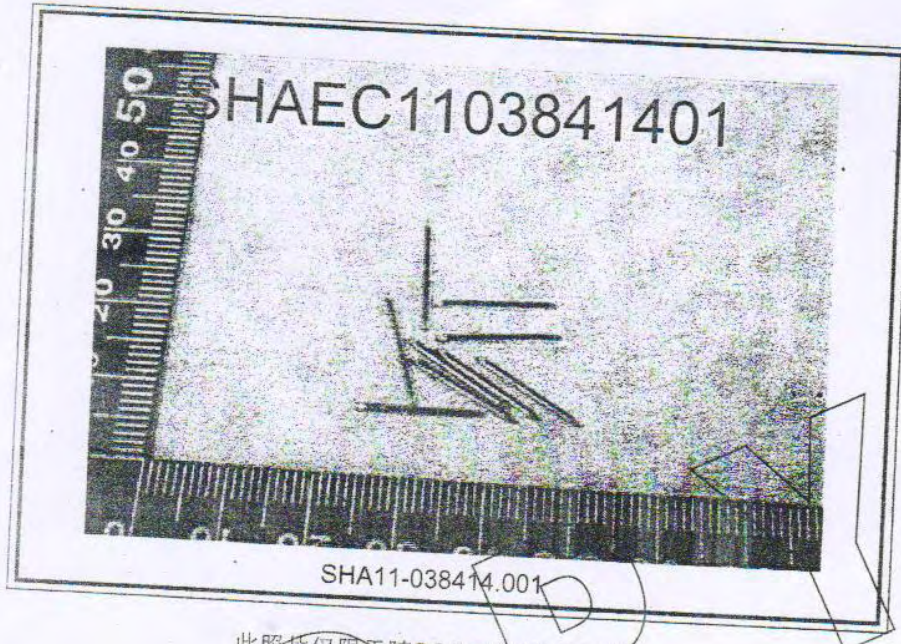
测试报告

No. SHAEC1103841401

日期: 2011年03月31日

第4页,共4页

样品照片:

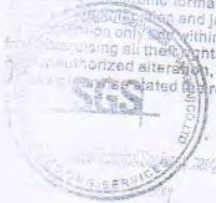


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 HL: (86-21) 61402594 HL: (86-21) 54500353 e sgs.china@sgs.com

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Member of the SGS Group (SGS SA)



测试报告

No. SHAEC1102902201

日期: 2011年03月18日

第1页,共4页

乐清市精饰电镀厂
浙江省乐清市北白象镇象塔南路42号

以下测试之样品是由申请者所提供及确认: 镀锌层

SGS工作编号: SP11-006643 - SH

型号: 配件

样品接收日期: 2011年03月14日

测试周期: 2011年03月14日 - 2011年03月18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, 测试结果与欧盟RoHS指令2002/95/EC以及后续修正指令的要求相符

COPY

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Fan Jingjie, JJ范晶捷

批准签署人

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HL: (86-21) 61402564 HL: (86-21) 54500353

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e sgs.china@sgs.com

测试报告

No. SHAEC1102902201

日期: 2011年03月18日

第2页,共4页

测试结果:

样品部件外观描述:

样品编号	SGS样品ID	描述
1	SHA11-029022.001	银蓝色金属

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2002/95/EC

测试方法: 参照IEC 62321:2008:

- (1) 用ICP-OES测定镉的含量.
- (2) 用ICP-OES测定铅的含量.
- (3) 用ICP-OES测定汞的含量.
- (4) 用点测试法/紫外-可见分光光度计比色法测定六价铬的含量.

测试项目	限值	单位	MDL	001
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 (CrVI)	-	-	◇	Negative

备注:

- (1) 最大允许极限值引用自2002/95/EC RoHS指令和后续修正指令2005/618/EC.
- (2) ◇ 点测试法:

Negative = 镀层中未检测到六价铬, Positive = 镀层中检测到六价铬;

(当点测试结果 Negative 或无法确定时,将采用沸水萃取法作进一步的结果验证.)

◇ 沸水萃取法:

Negative = 镀层中未检测到六价铬

Positive = 镀层中检测到六价铬; 表明50 cm²表面积的被测试样品的沸水萃取液中六价铬的浓度等于或大于0.02 mg/kg.

针对金属表面的防腐涂层: 由于未获知样品的存储条件和生产日期,样品的六价铬测试结果仅代表测试时样品的状态.

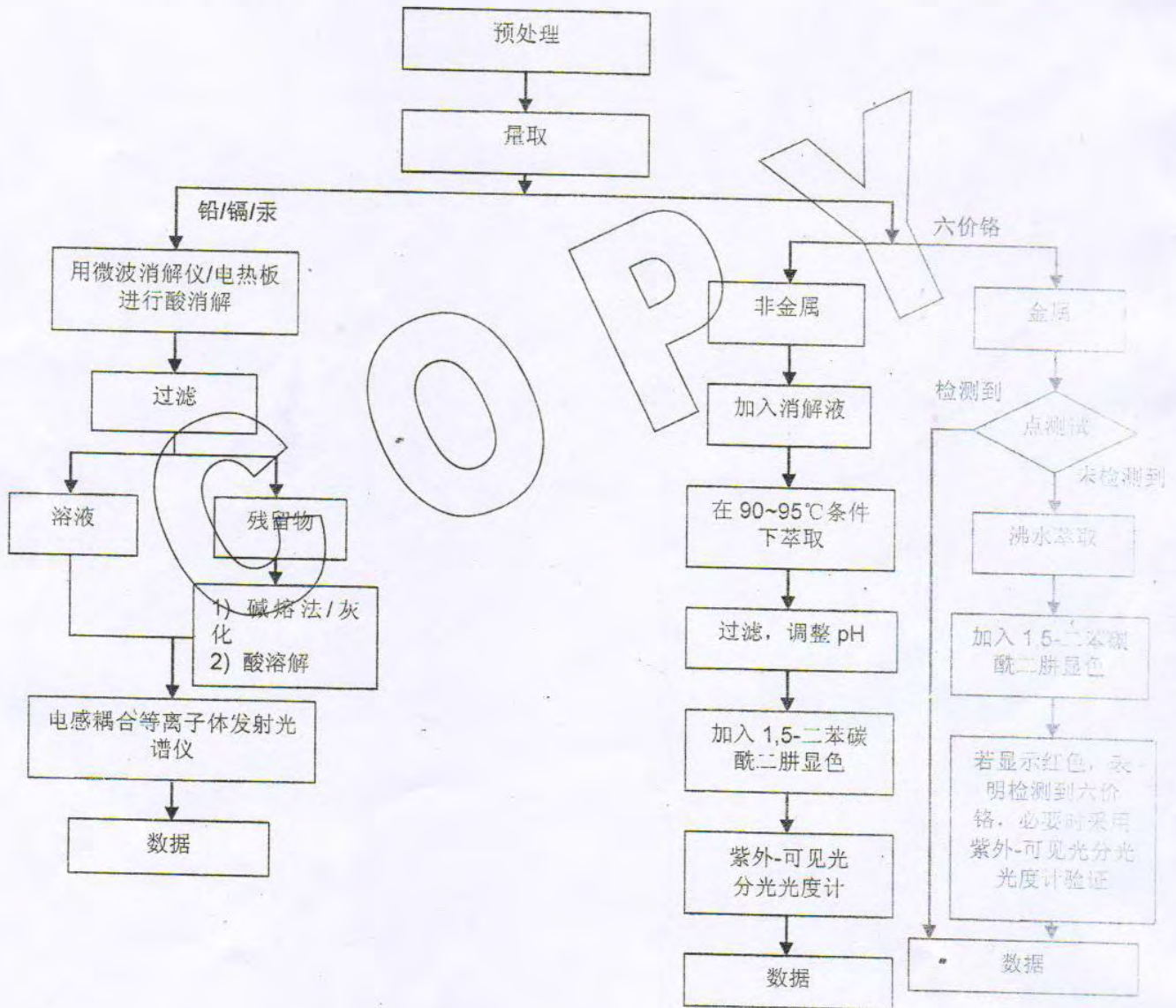
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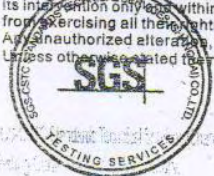
附件

RoHS 测试流程图

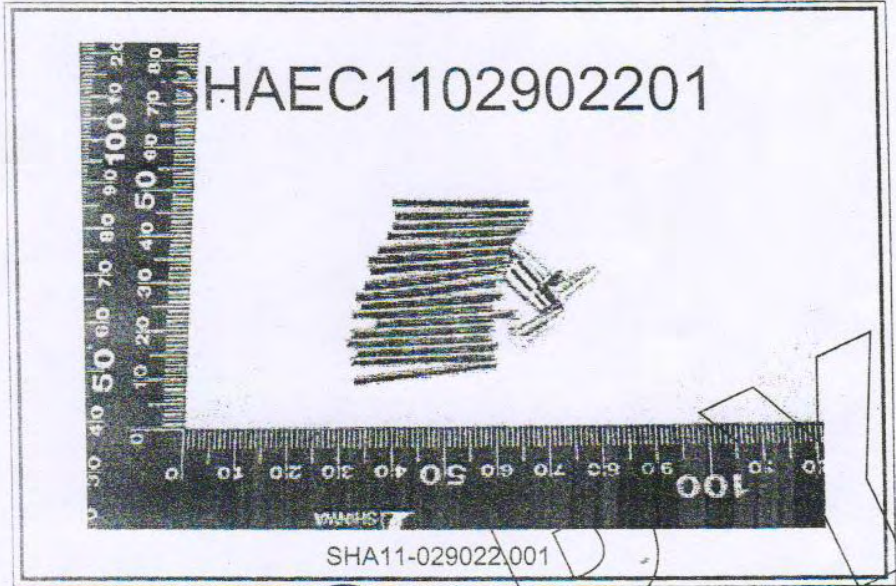
- 1) 分析人员: 肖飞/徐双/赵旭东
- 2) 项目负责人: 张春华/徐亮
- 3) 样品按照下述流程被完全消解 (六价铬测试除外)



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样品照片:

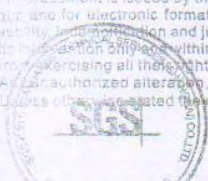


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4130697



Test Report

No. SHAEC1102692401

Date: 16 Mar 2011

Page 1 of 8

JIAGANG SYNTHETIC MATERIALS CO LTD OF JIAXING
SHITONG ROAD, XIUZHOU INDUSTRY GARDEN OF JIAXING

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

SGS Job No. : SP11-006182 - SH
Buyer : PANASONIC
Composition : EPOXY AND HARDENER
Supplier : JIAGANG SYNTHETIC MATERIALS CO LTD OF JIAXING
Model No. : 910(black)
Date of Sample Received : 10 Mar 2011
Testing Period : 10 Mar 2011 - 16 Mar 2011
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 comply with the RoHS Directive 2002/95/EC and its subsequent amendments.

Signed for and on behalf of
SGS-CSTC Ltd.

Fan Jingjie, JJ
Approved Signatory

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Test Report

No. SHAEC1102692401

Date: 16 Mar 2011

Page 2 of 8

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA11-026924.001	Black solid

Remarks :

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

RoHS Directive 2002/95/EC

Test Method : With reference to IEC 62321:2008

- (1) Determination of Cadmium by ICP-OES.
- (2) Determination of Lead by ICP-OES.
- (3) Determination of Mercury by ICP-OES.
- (4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
- (5) Determination of PBBs / PBDEs content by GC-MS.

Test Item(s)	Limit	Unit	MDL	001
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 Report

No. SHAEC1102692401

Date: 16 Mar 2011

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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</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 the document 2005/618/EC amending RoHS directive 2002/95/EC

Polynuclear Aromatic Hydrocarbons (PAH)

Test Method : With reference to ZEK 01.2-08 of German ZLS and its amendments, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Sum of 16 PAH	mg/kg	-	ND
Naphthalene(NAP)	mg/kg	0.2	ND
Acenaphthylene(ANY)	mg/kg	0.2	ND
Acenaphthene(ANA)	mg/kg	0.2	ND
Fluorene(FLU)	mg/kg	0.2	ND
Phenanthrene(PHE)	mg/kg	0.2	ND
Anthracene(ANT)	mg/kg	0.2	ND
Fluoranthene(FLT)	mg/kg	0.2	ND
Pyrene(PYR)	mg/kg	0.2	ND
Benzo(a)anthracene(BaA)	mg/kg	0.2	ND
Chrysene(CHR)	mg/kg	0.2	ND
Benzo(b)fluoranthene(BbF)	mg/kg	0.2	ND
Benzo(k)fluoranthene(BkF)	mg/kg	0.2	ND
Benzo(a)pyrene(BaP)	mg/kg	0.2	ND
Indeno(1,2,3-c,d)pyrene(IPY)	mg/kg	0.2	ND
Dibenzo(a,h)anthracene(DBA)	mg/kg	0.2	ND
Benzo(g,h,i)perylene(BPE)	mg/kg	0.2	ND

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ZEK 01.2-08: Restraining maximum values for products

Parameter	Category 1	Category 2	Category 3
	Material indented to be put in the mouth or material for toys with normal skin contact for children aged < 36 months	Materials which are not included in Category 1, with predictable contact with the skin longer than 30 s. (long-term skin contact)	Materials which are not included in Category 1 or 2, with predictable skin contact up to 30 s (short-term skin contact).
Benzo[a]pyrene (mg/kg)	<MDL (<0.2)***	1	20
Sum of 16 PAH(US EPA) (mg/kg)**	<MDL (<0.2)***	10	200

Remark : ** = Only PAH substances >0.2 mg/kg are taken into account while calculating the sum of PAH
 *** = In case that the maximum values exceed the limits of category 1, but are within the limits of category 2, one may confirm the suitability of the tested material which is indented to be put in the mouth by additional specific migration tests of PAH components based on DIN EN 1186ff and §64 LFGB 80.30-1. The conclusion of the migration test results must be made based on food law criteria.

PFOS (Perfluorooctane Sulfonates)

Test Method : With reference to US EPA 3550C: 2007, analysis was performed by HPLC-MS.

Test Item(s)	Unit	MDL	001
Perfluorooctane Sulfonates (PFOS) and related Acid,Metal Salt and Amide	mg/kg	10	ND

Notes :

- (1) PFOS Reference Information: Entry 53 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2006/122/EC)
 - (i) May not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0.005 % by mass.
 - (ii) May not be placed on the market in semi-finished products or articles, or parts thereof, if the concentration of PFOS is equal to or higher than 0.1 % by mass calculated with reference to the mass of structurally or microstructurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is equal to or higher than 1µg /m² of the coated material. Please refer to Regulation (EC) No 552/2009 to get more detail information

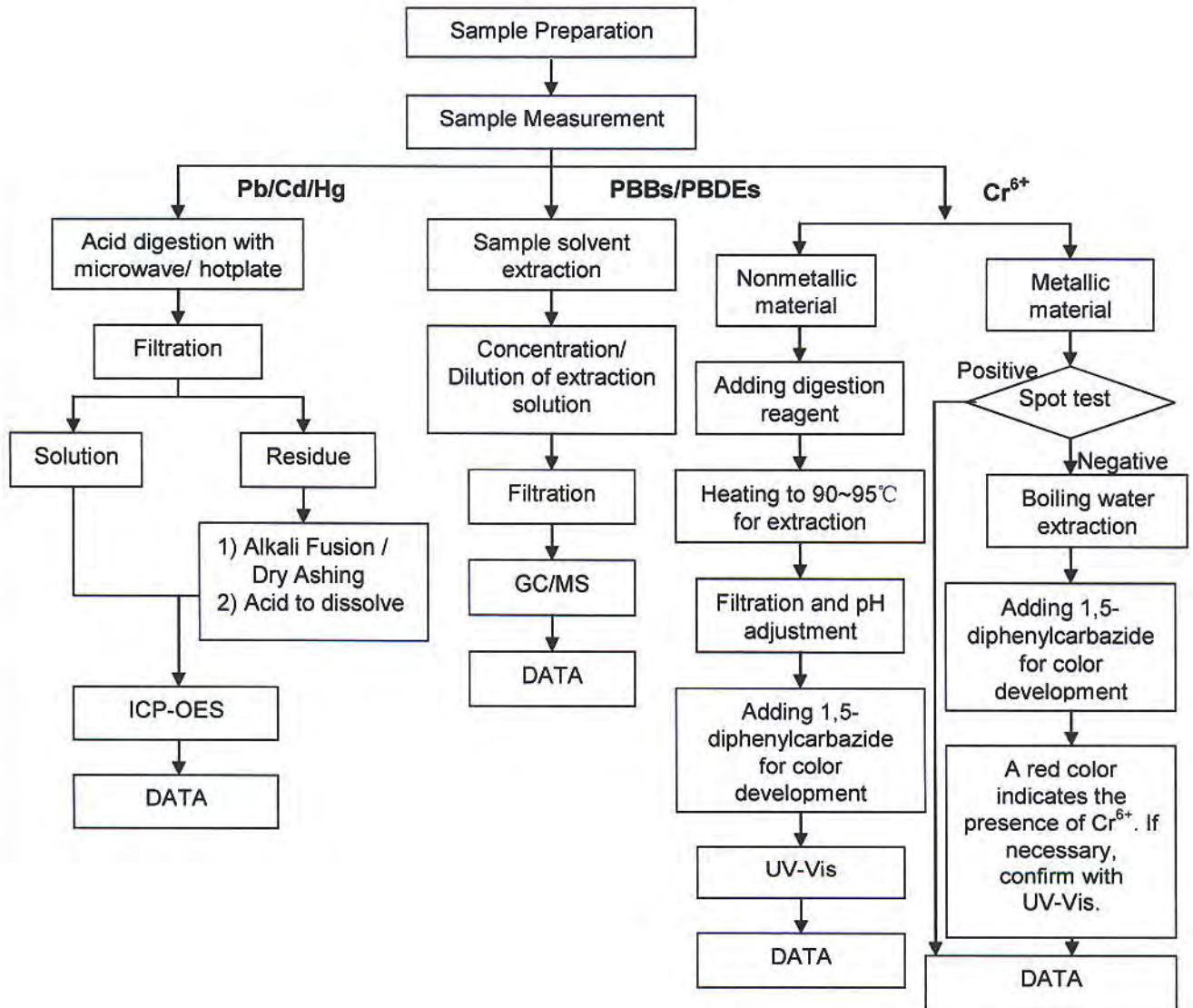
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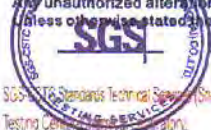
ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Allen Xiao/ Even Xu / Andy Zhao /Elim Lin
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu/Tracy Yue
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ and PBBs/PBDEs test method excluded)

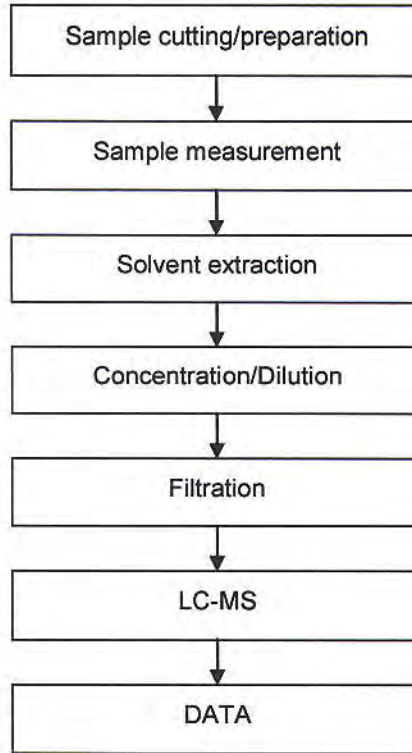


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PFOS Testing Flow Chart

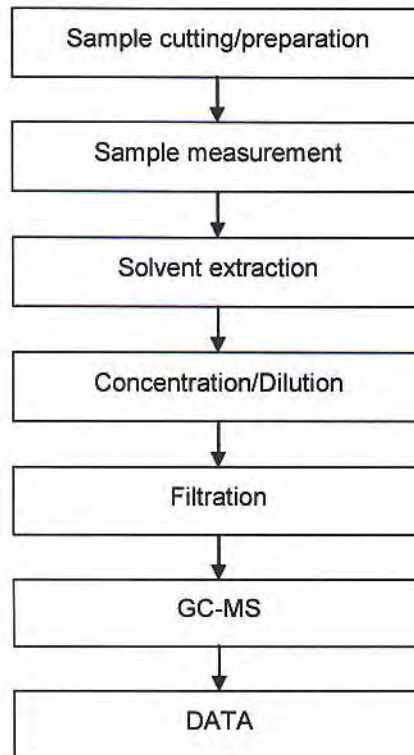
- 1) Name of the person who made testing: Judy Li
- 2) Name of the person in charge of testing: Nancy Du



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PAHs Testing Flow Chart

- 1) Name of the person who made testing: Jessy Huang
- 2) Name of the person in charge of testing: Tracy Yue



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Sample photo:



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