ICP Test Report Certification Packet

Company name: Littelfuse, Inc.

Product Series: 2AG Axial Leads

Product #: 230xxxP Series

Issue Date: October 23, 2012

It is hereby certified by Littelfuse, Inc. that there is neither RoHS (EU Directive 2002/95/EC, 2011/65/EU)-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 2AG Axial Leads 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 identifed 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	082779	WIRE Tin plated Cu	3-12
2	082xxx-001	WIRE Tin plated Cu	3-12
3	087244	HMA - RoHS	13-17
4	087244	HMA - Halogens	18-21
5	692535-001	Solder	22-26
6	895-195	Sleeve	27-53
7	910-222	Cap	54-57
8	910-537-3	Cap Base	55-61
9	910-537-3	Cap plating	62-65
10	934-056	Overcap – Cap base and plating	66-69
11	934-056	Overcap – Wire base and plating	66-69
12	648106-001	Yarn	70-75
13	648115	Yarn	76-84
14	090187	Filler	85-93
15	C909-367-001	Glass Body	94-98
16	C909-369-001	Glass Body	94-98
17	425209	Fluorescein	99-110

Validity unknown
For Question
Please Contact with SGS
www.tw.sgs.com

測試報告
Test Report

號碼(No.) : CE/2012/10834　　日期(Date) : 2012/01/12　　頁數(Page) : 1 of 10

ELSCHUKOM ELEKTROSCHUTZKOMPONENTENBAU GMBH
GEWERBESTRASSE 87, D-98669 VEILSDORF, GERMANY

以下測試樣品係由客户送樣，且由客户聲稱並經客户確認如下 (The following samples was/were submitted and identified by/on behalf of the client as):

樣品名稱(Sample Description)	:	TINNED WIRES
樣品型號(Style/Item No.)	:	請參考第5頁 (PLEASE REFER TO PAGE 5)
原產國(Country of Origin)	:	德國 (GERMANY)
收件日期(Sample Receiving Date)	:	2012/1/4
測試期間(Testing Period)	:	2012/1/4 TO 2012/01/11

==========

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).

SGS TAIWAN LTD
SGS
TAIWAN

Chenyu Kung / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory – Taipei

測試報告
Test Report

ELSCHUKOM ELEKTROSCHUTZKOMPONENTENBAU GMBH
GEWERBESTRASSE 87, D-98669 VEILSDORF, GERMANY

測試結果(Test Results)

測試部位(PART NAME) No.1 : 混測所有顏色金屬線（含鍍層）(共14款) (MIXED ALL COLOR METAL WIRE (INCLUDING THE PLATING LAYER) (14 TYPES))

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321: 2008方法，以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321: 2008方法，以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	68
汞 / Mercury (Hg)	mg/kg	參考IEC 62321: 2008方法，以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI)	**	參考IEC 62321: 2008方法，以沸水萃取法檢測. / With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	參考US EPA 3540C: 1996方法，以液相層析質譜儀檢測全氟辛烷磺酸含量. / With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS.	10	n.d.
全氟辛酸(銨) / PFOA (CAS No.: 335-67-1)	mg/kg	參考US EPA 3540C: 1996方法，以液相層析質譜儀檢測全氟辛酸(銨)含量. / With reference to US EPA 3540C: 1996 method for PFOA Content. Analysis was performed by LC/MS.	10	n.d.

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Test Report

ELSCHUKOM ELEKTROSCHUTZKOMPONENTENBAU GMBH
GEWERBESTRASSE 87, D-98669 VEILSDORF, GERMANY

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321: 2008方法, 以氣相層析儀/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
一溴聯苯 / Monobromobiphenyl			5	n.d.
二溴聯苯 / Dibromobiphenyl			5	n.d.
三溴聯苯 / Tribromobiphenyl			5	n.d.
四溴聯苯 / Tetrabromobiphenyl			5	n.d.
五溴聯苯 / Pentabromobiphenyl			5	n.d.
六溴聯苯 / Hexabromobiphenyl			5	n.d.
七溴聯苯 / Heptabromobiphenyl			5	n.d.
八溴聯苯 / Octabromobiphenyl			5	n.d.
九溴聯苯 / Nonabromobiphenyl			5	n.d.
十溴聯苯 / Decabromobiphenyl			5	n.d.
多溴聯苯醚總和 / Sum of PBDEs			-	n.d.
一溴聯苯醚 / Monobromodiphenyl ether			5	n.d.
二溴聯苯醚 / Dibromodiphenyl ether			5	n.d.
三溴聯苯醚 / Tribromodiphenyl ether			5	n.d.
四溴聯苯醚 / Tetrabromodiphenyl ether			5	n.d.
五溴聯苯醚 / Pentabromodiphenyl ether			5	n.d.
六溴聯苯醚 / Hexabromodiphenyl ether			5	n.d.
七溴聯苯醚 / Heptabromodiphenyl ether			5	n.d.
八溴聯苯醚 / Octabromodiphenyl ether			5	n.d.
九溴聯苯醚 / Nonabromodiphenyl ether			5	n.d.
十溴聯苯醚 / Decabromodiphenyl ether			5	n.d.
鹵素 / Halogen				
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	參考BS EN 14582:2007, 以離子層析儀分析. / With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)			50	n.d.
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)			50	n.d.
鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 14362-44-8)			50	n.d.

測試報告
Test Report

ELSCHUKOM ELEKTROSCHUTZKOMPONENTENBAU GMBH
GEWERBESTRASSE 87, D-98669 VEILSDORF, GERMANY

備註(Note)：

1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. "-" = Not Regulated (無規格值)
5. **= Qualitative analysis (No Unit) 定性分析(無單位)
6. # = a. Positive means the presence of CrVI on the tested areas
   (Positive表示測試區域偵測到六價鉻)
   b. Negative means the absence of CrVI on the tested areas
   (Negative表示測試區域未偵測到六價鉻)
   The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm^2 tested areas. / 該溶液濃度≧0.02 mg/kg with 50 cm^2 (tested areas)
7. 樣品的測試是基於申請人要求混合測試，報告中的混合測試結果不代表其中個別單一材質的含量.
   (The samples was/were analyzed on behalf of the applicant as mixing sample in one testing. The above results was/were only given as the informality value.)
8. 此份報告取代2012/01/11所核發的CE/2012/10834報告.
   (This report supersedes the previous document bearing the test report number CE/2012/10834 which was issued on 2012/01/11.)

PFOS參考資訊(Reference Information) : 指令 2006/122/EC (Directive 2006/122/EC)

(1) 該物質不可置於市場上或使用於特殊物質或配置成分重量濃度等於或大於0.005%.
(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.)

(2) 該物質不可置於市場上的半成品或商品或其物件；假若零件上明顯地具有PFOS並參照結構上及微細構造上計算PFOS重量濃度等於或大於0.1%，而紡織品或其他覆蓋物質，如果PFOS在覆蓋物質中含量等於或大於1μg/m^2.
(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/m^2 of the coated material.)

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Test Report

號碼(No.) : CE/2012/10834　　日期(Date) : 2012/01/12　　頁數(Page) : 5 of 10

ELSCHUKOM ELEKTROSCHUTZKOMPONENTENBAU GMBH
GEWERBESTRASSE 87, D-98669 VEILSDORF, GERMANY

樣品型號(Style/Item No.) :

(A-1) 101 - - 271. 0 - - - —tinned copper wire—Cu, Sn - - %
(A-2) 101 - - 283. 0 - - - —tinned copper clad wire—Elcon 30, Sn - - %
(A-3) 101 - - 272. 0 - - - —tinned copper clad wire—Elcon F, Sn - - %
(A-4) 101 - - 281. 0 - - - —tinned copper clad wire—Elcon D, Sn - - %
(A-5) 101- - 221. 0 - - - —tinned copper nickel alloy wire—CuNi44, Sn - - %
(A-6) 101 - - 24-. 0 - - - —tinned silver plated copper wire—Cu, Ag--%, Sn -- %
(A-7) 101 - - 257. 0 - - - —tinned brass wire—Cu80Zn20, Sn - - %
(A-8) 101 - - 232. 0 - - - —tinned silver copper alloy wire—AgCu50, Sn - - %
(A-9) 101 - - 234. 0 - - - —tinned silver copper alloy wire—AgCu90, Sn - -% (ElCu90, Sn - - %)
(A-10) 101- - 255. - - - - —tinned copper zinc alloy wire—Cu70Zn30, Sn - - %
(A-11) 101- - 229. - - - - —tinned copper nickel alloy wire—CuNi12, Sn - - %
(A-12) 101- - 235. - - - - —tinned silver copper alloy wire—Ag72Cu28, Sn - - %
(A-13) 101- - 231. - - - - —tinned silver wire—Ag1000, Sn - - %
(A-14) 101- - 236. - - - - —tinned silver copper alloy wire — Ag45Cu55, Sn - - %(AgCu55, Sn)

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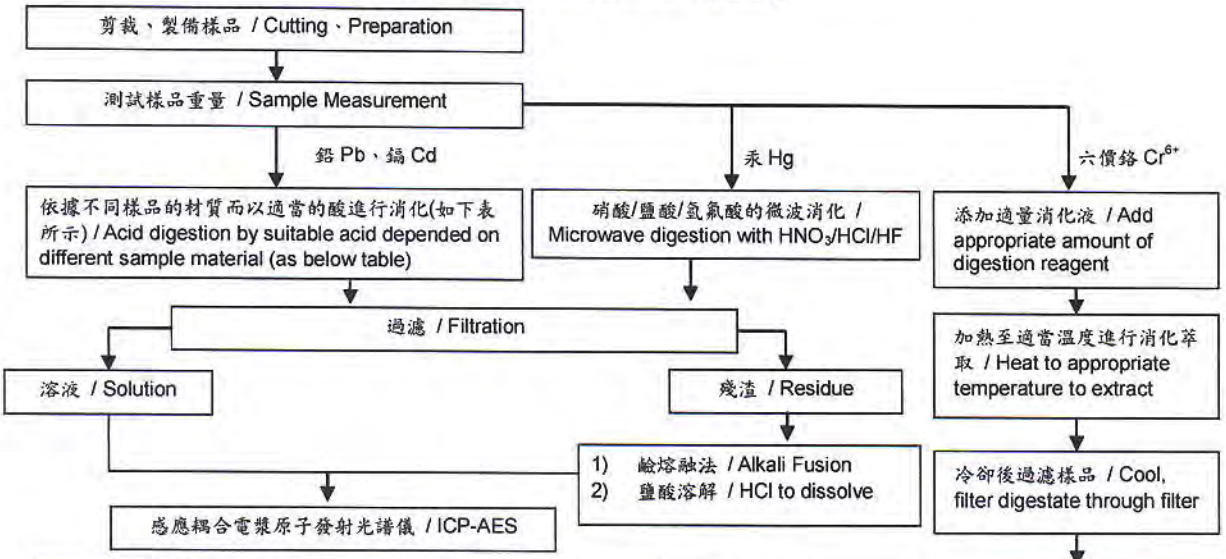
Test Report

ELSCHUKOM ELEKTROSCHUTZKOMPONENTENBAU GMBH
GEWERBESTRASSE 87, D-98669 VEILSDORF, GERMANY

1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)
2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
3) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



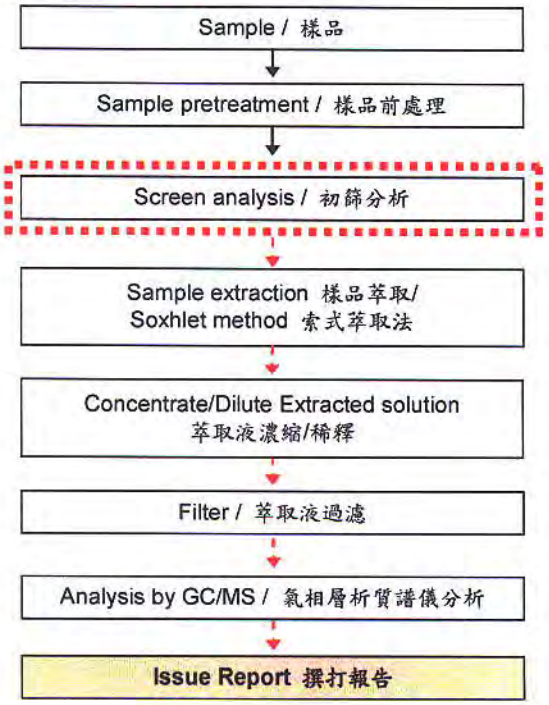
樣品材質 / Sample Material	消化酸液種類 / Digestion Acid
鋼, 銅, 鋁, 焊錫 / Steel, copper, aluminum, solder	王水, 硝酸, 鹽酸, 氫氟酸, 雙氧水 / Aqua regia, HNO_3, HCl, HF, H_2O_2
玻璃 / Glass	硝酸,氫氟酸 / HNO_3/HF
金, 鉑, 鈀, 陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO_3
塑膠 / Plastic	硫酸, 雙氧水, 硝酸, 鹽酸 / H_2SO_4, H_2O_2, HNO_3, HCl
其他 / Others	加入任何酸至完全溶解 / Any acid to total digestion

ELSCHUKOM ELEKTROSCHUTZKOMPONENTENBAU GMBH
GEWERBESTRASSE 87, D-98669 VEILSDORF, GERMANY

多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang

初次測試程序 / First testing process ——→
選擇性篩檢程序 / Optional screen process ·····
確認程序 / Confirmation process — · — ·→

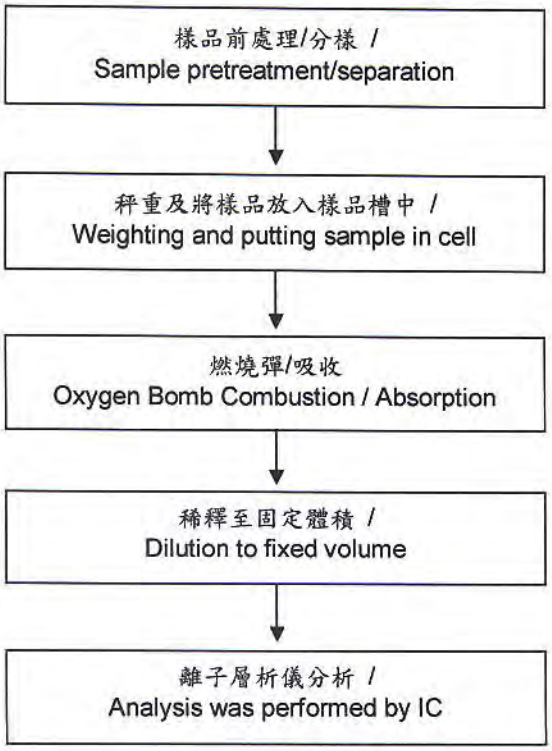


測試報告
Test Report

ELSCHUKOM ELEKTROSCHUTZKOMPONENTENBAU GMBH
GEWERBESTRASSE 87, D-98669 VEILSDORF, GERMANY

鹵素分析流程圖 / Analytical flow chart of halogen content

- 測試人員：陳恩臻 / Name of the person who made measurement: Rita Chen
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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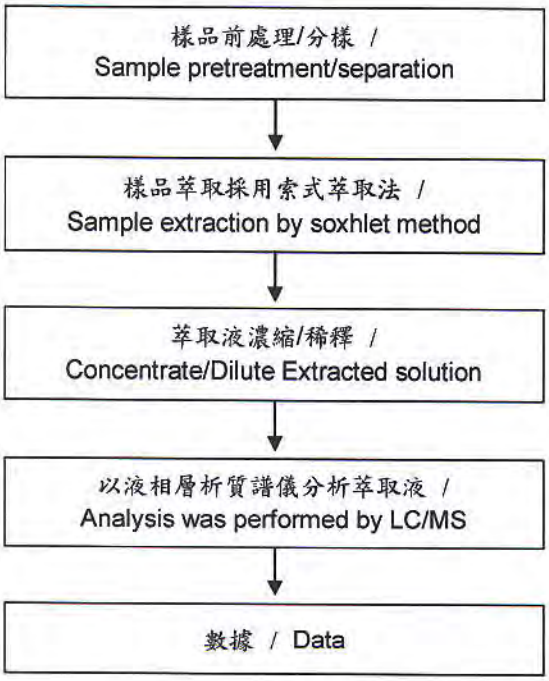
GEWERBESTRASSE 87, D-98669 VEILSDORF, GERMANY

索式萃取分析流程圖 /
Analytical flow chart of Soxhlet extraction (LC/MS) procedure

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang

【測試項目: 全氟辛烷磺酸/全氟辛酸(鹽)、苯並三唑類化合物 /
Test Items: PFOS/PFOA、Benzotriazole】



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Test Report

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ELSCHUKOM ELEKTROSCHUTZKOMPONENTENBAU GMBH
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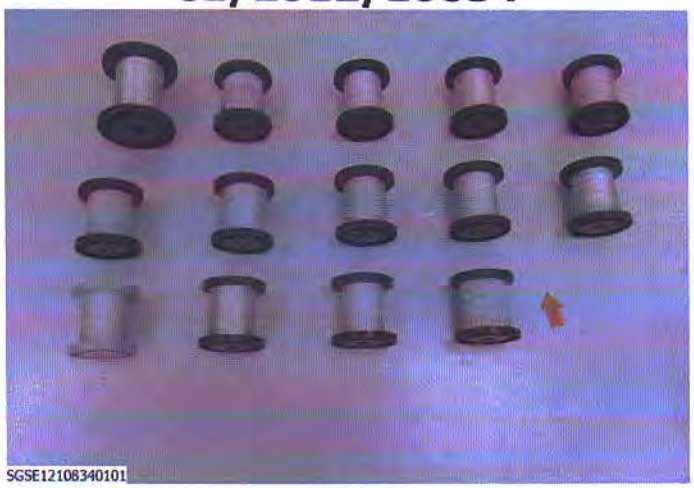
* 照片中如有箭頭標示，則表示爲實際檢測之樣品/部位. *
(The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2012/10834

SGSE12108340001

CE/2012/10834



SGSE12108340101

** 報告結尾(End of Report) **

Test Report

No. SHAEC1119525001 Date: 07 Dec 2011

3M CHINA LIMITED

222# TIAN LIN ROAD, SHANGHAI (200233)

The following sample(s) was/were submitted and identified on behalf of the clients as : 3M 3779-PG

SGS Job No. :	SP11-036760 - SH
Date of Sample Received :	03 Dec 2011
Testing Period :	03 Dec 2011 - 07 Dec 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).

Signed for and on behalf of
SGS-CSTC Ltd.

Fan Jingjie, JJ
Approved Signatory

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
Testing Certification Inspection
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233
t E&E (86-21) 61402553 f E&E (86-21)64953679 www.cn.sgs.com
HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA11-195250.001	Yellow 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 2011/65/EU

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 (Cr(VI))	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

Test Item(s)	Limit	Unit	MDL	*001*
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

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
Testing Center
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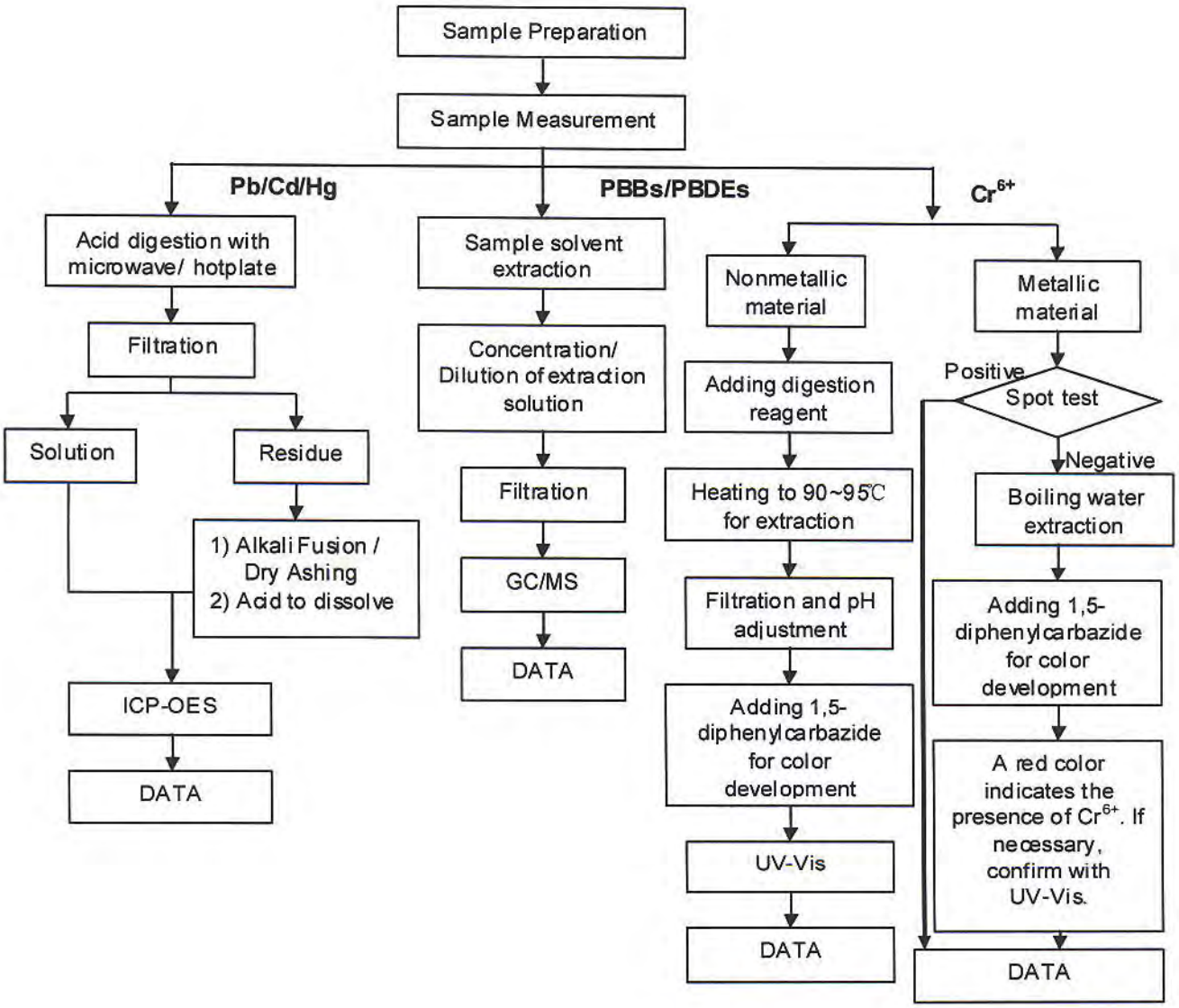
HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao/Gary Xu
2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Elim Lin
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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Testing Service Certification
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HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

Sample photo:

SHA11-195250.001

SGS authenticate the photo on original report only

*** End of Report ***

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Test Report

No. SHAEC1119525002 Date: 07 Dec 2011

3M CHINA LIMITED

222# TIAN LIN ROAD, SHANGHAI (200233)

The following sample(s) was/were submitted and identified on behalf of the clients as : 3M 3779-PG

SGS Job No. :	SP11-036760 - SH
Date of Sample Received :	03 Dec 2011
Testing Period :	03 Dec 2011 - 07 Dec 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).

Signed for and on behalf of
SGS-CSTC Ltd.

Fan Jingjie, JJ
Approved Signatory

3/F,Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.cn.sgs.com
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA11-195250.001	Yellow solid

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

Halogen

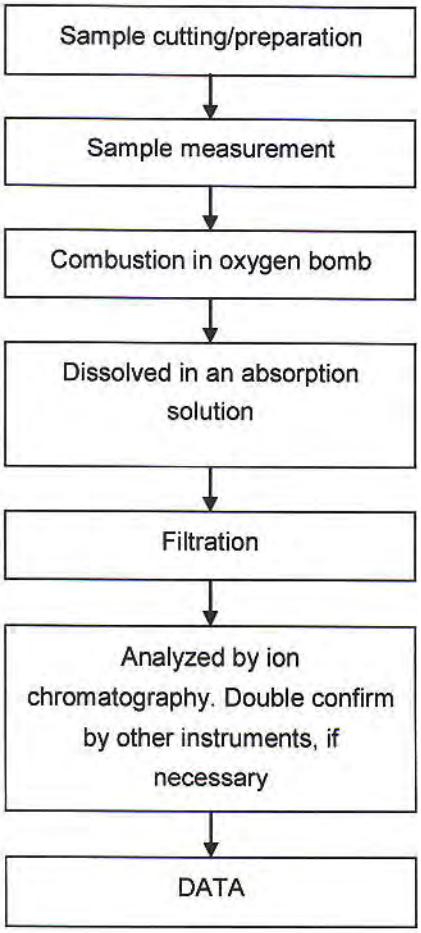
Test Method : With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

Test Item(s)	Unit	MDL	*001*
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

ATTACHMENTS

Halogen Testing Flow Chart

1) Name of the person who made testing: Daisy Gong
2) Name of the person in charge of testing: Alex Jiang



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
Testing Service Certification
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233
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Sample photo:

SHA11-195250.001

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Test Report

No. SHAEC1216714748 Date: 25 Sep 2012

ZHEJIANG ASIA GENERAL SOLDERING&BRAZING MATERIAL CO., LTD

XIHU INDUSTRIAL PARK, SANDUN, HANGZHOU CITY, ZHEJIANG, PROVINCE, CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : LEAD-FREE SOLDER WIRE

SGS Job No. :	SP12-028285 - SH
Part No. (P/N) :	YTW108（692535-001、692535-003）
Composition :	Sn3.0CuRE
Date of Sample Received :	21 Sep 2012
Testing Period :	21 Sep 2012 - 25 Sep 2012
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Ltd.

Fan Jingjie, JJ
Approved Signatory

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA12-167147.041	Silvery wire

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive 2011/65/EU

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 Spot test / Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	*041*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	55
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	-	-	◇	Negative
Sum of PBBs	1000	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	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

Test Item(s)	Limit	Unit	MDL	041
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

(2) ◇Spot-test:

Negative = Absence of Cr(VI) coating, Positive = Presence of Cr(VI) coating;
(The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be confirmed.)

◇Boiling-water-extraction:

Negative = Absence of Cr(VI) coating

Positive = Presence of Cr(VI) coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm^2 sample surface area.

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

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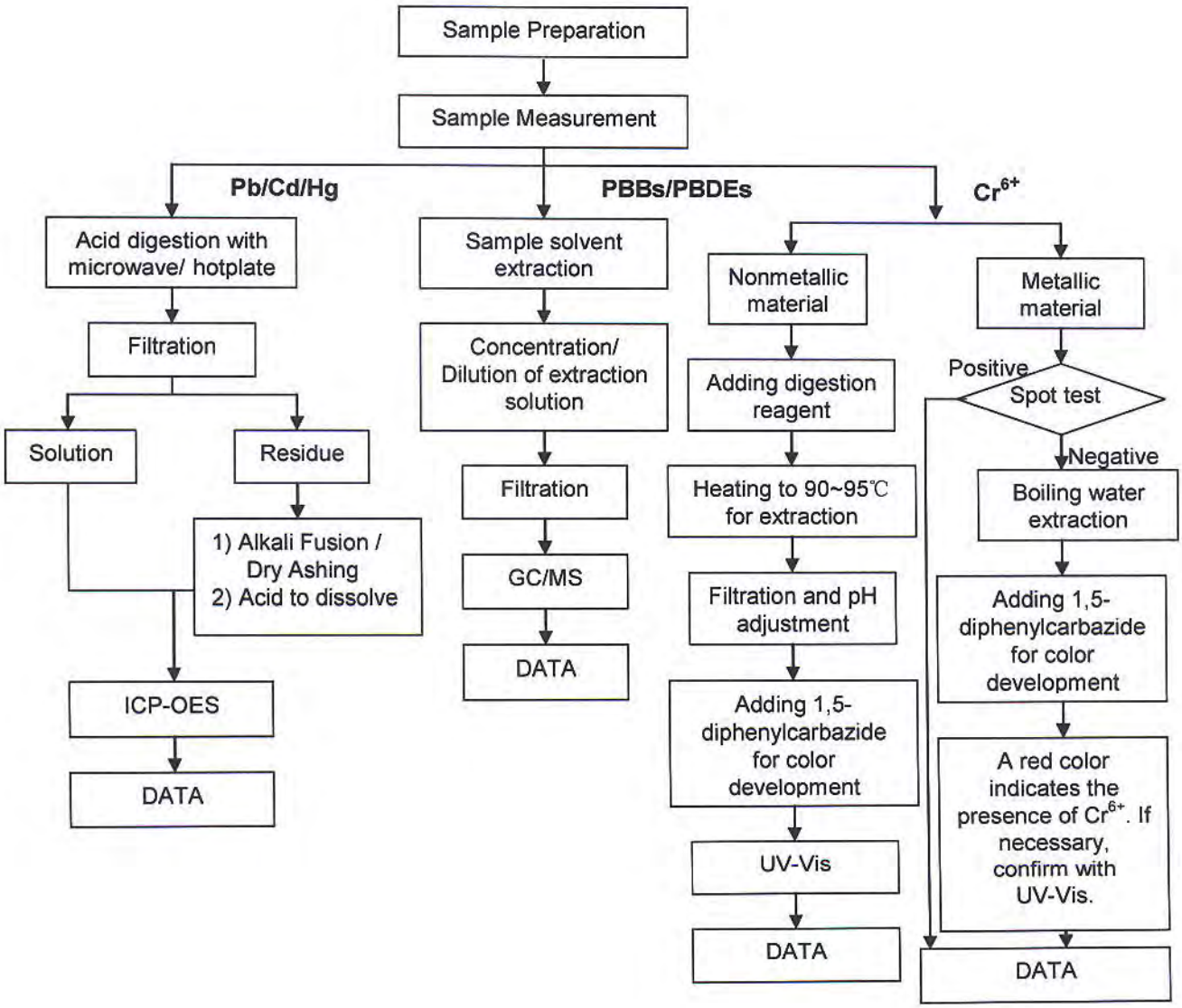
Member of the SGS Group (SGS SA)

ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao/Gary Xu
2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Linda Li
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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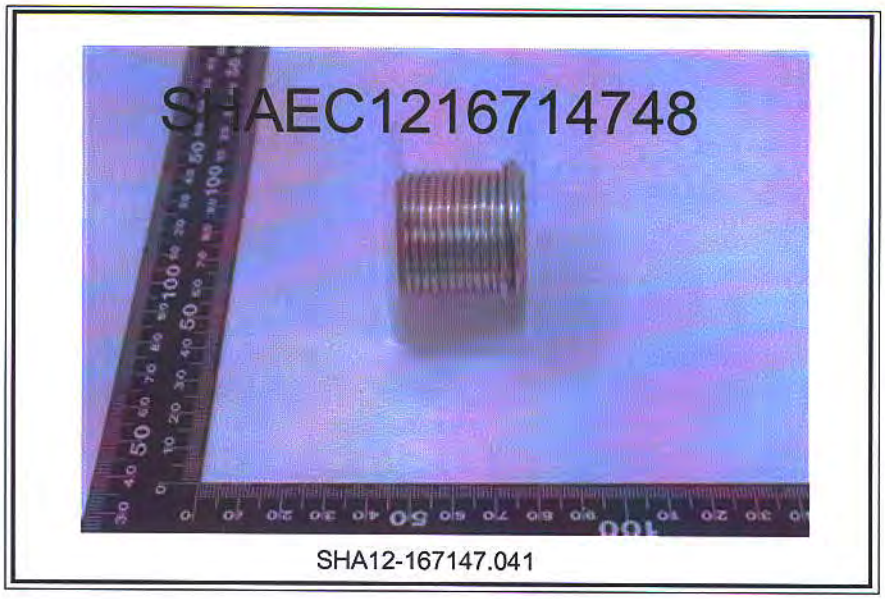
Sample photo:



SHA12-167147.041

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CTI 华测检测

格瑞玉管

检测报告
Test Report

报告编号 RLSHE000876540006
Report No. RLSHE000876540006

申请单位 苏州工业园区格瑞包装五金有限公司
Applicant SUZHOU INDUSTRIAL PARK GREAT PACKAGING AND METALS CO., LTD.
地 址 苏州工业园区娄葑民营工业区
Address MINGYING INDUSTRIAL PARK，SUZHOU INDUSTRIAL PARK，SUZHOU CITY

样品信息 Report on the submitted sample(s) said to be

样品名称 Sample Name	PE 热缩套管(阻燃型)/PE 热缩套管(超薄型) HEAT-SHRINKABLE PE TUBES (FLAMC –RETARDANT)/HEAT-SHRINKABLE PE TUBES (THIN WALL)
样品描述 Sample Description	PE 热缩套管(阻燃型)/PE 热缩套管(超薄型) NHEAT-SHRINKABLE PETUBES (FLAMC –RETARDANT)/HEAT-SHRINKABLE PE TUBES (THIN WALL)
样品接收日期 Sample Received Date	2012.02.21 Feb.21,2012
样品检测日期 Testing Period	2012.02.21-2012.02.27 Feb.21,2012 to Feb.27,2012
检测要求 Test Requested	请参见下页. Please refer to the following pages.
检测依据和检测结果 Test Method & Test Result	请参见下页. Please refer to the following pages.

主 检: Chen Lijuan
Tested by

审 核: Zhong Yijun
Inspected by

签 发: Chen Qian
Approved by

技术经理
Technical Manager

签发日期: 2012.02.27
Date Feb.27,2012

CTI CENTRE TESTING INTERNATIONAL SH03

No. 94635874

检测报告
Test Report

检测要求

1.根据客户要求，测定所提交样品中的铅(Pb)，镉(Cd)，汞(Hg)，六价铬(Cr(VI))，多溴联苯(PBBs)，多溴二苯醚(PBDEs)的含量。

2.根据客户要求，参照法规(EC) No 1907/2006(REACH)，对所提交样品中 73 种高关注物质(SVHC)(蒽、4,4'-二氨基二苯基甲烷、邻苯二甲酸二丁酯、二氯化钴、五氧化二砷、三氧化二砷，重铬酸钠、二甲苯麝香、邻苯二甲酸二(2-乙基己基)酯(DEHP)、六溴环十二烷(HBCDD)、短链氯化石蜡、三丁基氧化锡、砷酸氢铅、邻苯二甲酸丁基苄酯、三乙基砷酸酯、葸油、4 种葸油类、煤焦油沥青,高温、丙烯酰胺、硅酸铝耐火陶瓷纤维、氧化锆硅酸铝耐火陶瓷纤维、2,4-二硝基甲苯、邻苯二甲酸二异丁酯(DIBP)、铬酸铅、钼铬红(C.I.颜料红 104)、铅铬黄(C.I.颜料黄 34)、磷酸三(2-氯乙基)酯(TCEP)、三氯乙烯、硼酸、四硼酸钠，无水、四硼酸钠，水合物、铬酸钠、铬酸钾、重铬酸铵、重铬酸钾、硫酸钴、硝酸钴、碳酸钴、醋酸钴、乙二醇单甲醚、乙二醇单乙醚、三氧化铬、从三氧化铬产生的酸类以及它们的齐聚物：铬酸、重铬酸、铬酸和重铬酸的齐聚物、乙二醇乙醚乙酸酯、铬酸锶、1,2-苯二酸-二(C7-11 支链与直链)烷基(醇)酯、水合肼、N-甲基吡咯烷酮、1，2，3-三氯丙烷、邻苯二甲酸二 C6-8 支链烷基酯（C7 富集）、铬酸铬、氢氧化铬酸锌钾、氢氧化铬酸锌、硅酸铝耐火陶瓷纤维、氧化锆硅酸铝耐火陶瓷纤维、甲醛苯胺共聚物、邻苯二甲酸二甲氧基乙酯、2-甲氧基苯胺(邻甲氧基苯胺)、4-(1,1,3,3-四甲基丁基)苯酚(别名：对特辛基苯酚)、1,2-二氯乙烷、双（2-甲氧基乙基）醚(别名：二乙二醇二甲醚)、砷酸、砷酸钙、砷酸铅、N,N-二甲基乙酰胺(DMAC)、4,4'-亚甲基双(2-氯苯胺) (MOCA)、酚酞、叠氮化铅、2,4,6-三硝基间苯二酚铅(别名：收敛酸铅)、苦味酸铅)进行筛选测试。

检测报告
Test Report

Test Requested

1.To determine the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs) content in the submitted sample according to the request of client.
2.As specified by client, to screen the 73 substances of very high concern (SVHC) under Regulation(EC) No 1907/2006 of REACH, including: Anthracene; 4,4`-Diaminodiphenylmethane; Dibutyl phthalate; Cobalt dichloride; Diarsenic pentaoxide; Diarsenic trioxide; Sodium dichromate; Musk-xylene; Bis(2-ethyl(hexyl)phthalate)(DEHP); Hexabromocyclododecane(HBCDD); Short Chain Chlorinated Paraffins; Bis(tributyltin)oxide; Lead hydrogen arsenate; Benzyl butyl phthalate; Triethyl Arsenate; Anthracene oil; four types of Anthracene oil fractions; Coal tar pitch, high temperature; Acrylamide; Aluminiosilicate, Refractory Ceramic Fibres; Zirconia Aluminosilicate, Refractory Ceramic Fibres; 2,4-Dinitrotoluene; Diisobutyl phthalate (DIBP); Lead chromate; Lead chromate molybdate sulphate red (C.I. Pigment Red 104); Lead sulfochromate yellow(C.I. Pigment Yellow 34); Tris(2-chloroethyl)phosphate (TCEP); Trichloroethylene; Boric acid; Disodium tetraborate, anhydrous; Tetraboron disodium heptaoxide, hydrate; Sodium chromate; Potassium chromate; Ammonium dichromate; Potassium dichromate; Cobalt(Ⅱ) sulphate; Cobalt(Ⅱ) dinitrate; Cobalt(Ⅱ) carbonate; Cobalt(Ⅱ) diacetate; 2-Methoxyethanol; 2-Ethoxyethanol; Chromium trioxide; Acids generated from chromium trioxide and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid; 2-ethoxyethyl acetate; Strontium chromate; 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters; Hydrazine; 1-methyl-2-pyrrolidone; 1,2,3-trichloropropane; 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich; Dichromium tris(chromate); Potassium hydroxyoctaoxodizincatedichromate; Pentazinc chromate octahydroxide; Aluminosilicate Refractory Ceramic Fibres (RCF); Zirconia Aluminosilicate Refractory Ceramic Fibres (Zr-RCF); Formaldehyde, oligomeric reaction products with aniline (technical MDA); Bis(2-methoxyethyl) phthalate; 2-Methoxyaniline(o-Anisidine); 4-(1,1,3,3-tetramethylbutyl)phenol (4-tert-Octylphenol); 1,2-Dichloroethane; Bis(2-methoxyethyl) ether; Arsenic acid; Calcium arsenate; Trilead diarsenate; N,N-dimethylacetamide (DMAC); 2,2'-dichloro-4,4'-methylenedianiline (MOCA); Phenolphthalein; Lead diazide; Lead 2,4,6-trinitro-m-phenylene dioxide (Lead styphnate); Lead dipicrate in the submitted sample.

检测报告
Test Report

1.1 检测依据 Test Method

测试项目 Tested Item	前处理方法 Pretreatment Method	测试仪器 Measured Equipment	方法检测限 M.D.L.
铅(Pb) Lead (Pb)	IEC 62321:2008 Ed.1 Sec.8	ICP-OES	2mg/kg
镉(Cd) Cadmium (Cd)	IEC 62321:2008 Ed.1 Sec.8	ICP-OES	2mg/kg
汞(Hg) Mercury (Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES	2mg/kg
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis	2mg/kg
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5 mg/kg
多溴二苯醚(PBDEs) Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5 mg/kg

1.2 检测结果 Test Result

测试项目 Tested Item	含量 Content
铅 Lead (Pb)	N.D.
镉 Cadmium (Cd)	N.D.
汞 Mercury (Hg)	N.D.
六价铬 Hexavalent Chromium (Cr(VI))	N.D.

检测报告
Test Report

测试项目 Tested Item	含量 Content
多溴联苯 Polybrominated Biphenyls(PBBs)	
一溴联苯 Monobromodiphenyl	N.D.
二溴联苯 Dibromobiphenyl	N.D.
三溴联苯 Tribromobiphenyl	N.D.
四溴联苯 Tetrabromobiphenyl	N.D.
五溴联苯 Pentabromobiphenyl	N.D.
六溴联苯 Hexabromobiphenyl	N.D.
七溴联苯 Heptabromobiphenyl	N.D.
八溴联苯 Octabromobiphenyl	N.D.
九溴联苯 Nonabromobiphenyl	N.D.
十溴联苯 Decabromobiphenyl	N.D.
多溴二苯醚 Polybrominated Diphenyl Ethers(PBDEs)	
一溴二苯醚 Monobromodiphenyl ether	N.D.
二溴二苯醚 Dibromobiphenyl ether	N.D.
三溴二苯醚 Tribromobiphenyl ether	N.D.
四溴二苯醚 Tetrabromobiphenyl ether	N.D.
五溴二苯醚 Pentabromobiphenyl ether	N.D.
六溴二苯醚 Hexabromobiphenyl ether	N.D.
七溴二苯醚 Heptabromobiphenyl ether	N.D.
八溴二苯醚 Octabromobiphenyl ether	N.D.
九溴二苯醚 Nonabromobiphenyl ether	N.D.
十溴二苯醚 Decabromobiphenyl ether	N.D.

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.

Note: The sample had been dissolved totally tested for Lead, Cadmium, and Mercury.

-M.D.L. = Method Detection Limit

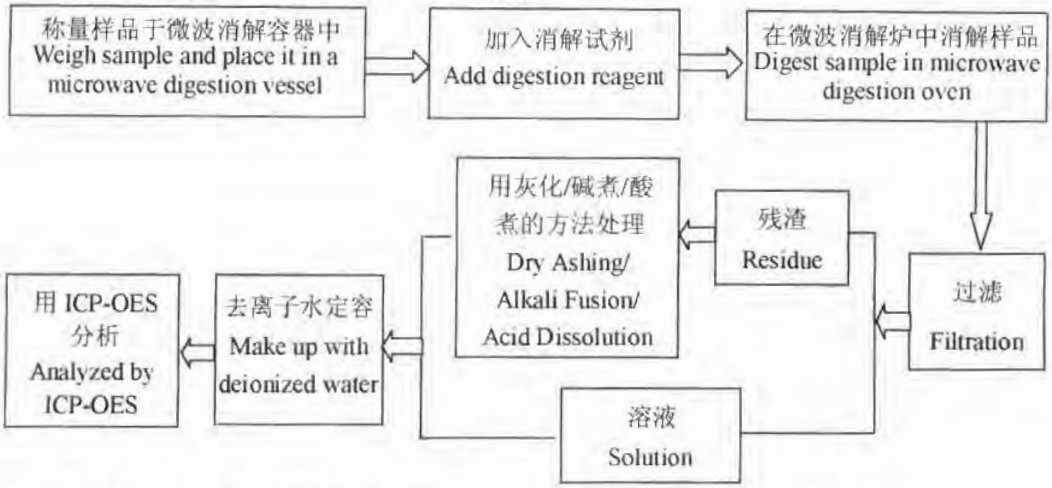
-N.D. = Not Detected (<M.D.L.)

-mg/kg= ppm =parts per million.

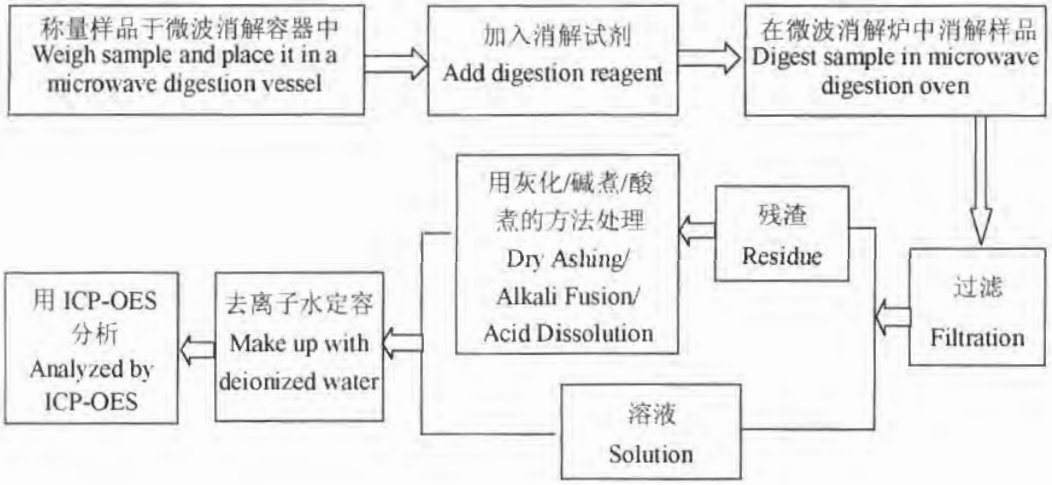
检测报告
Test Report

1.3 检测流程 Test Process

1.3.1 测定 Pb/ Cd 含量。Test for Pb/Cd Content.

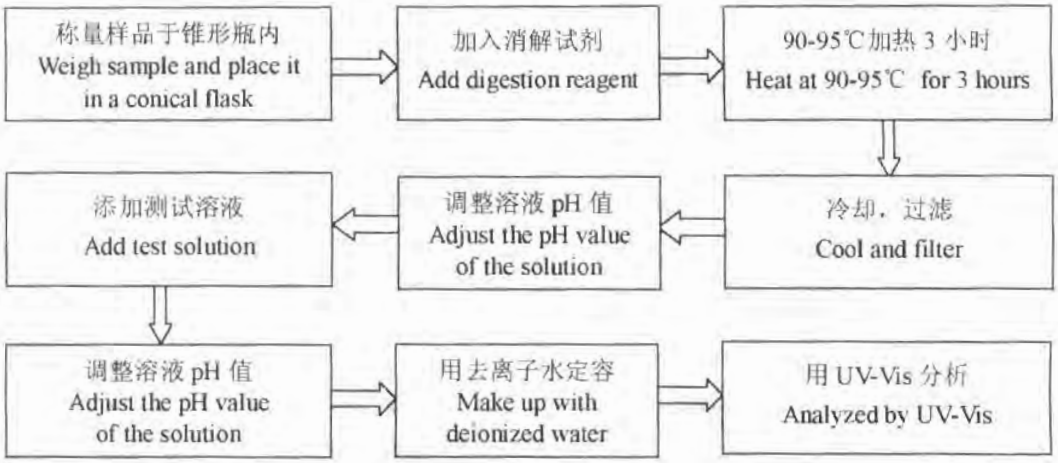


1.3.2 测定 Hg 含量。Test for Hg Content.



检测报告
Test Report

1.3.3 测定 Cr(VI)含量。Test for Cr (VI) Content.



1.3.4 测定多溴联苯和多溴二苯醚含量。Test for PBBs /PBDEs Contents.

检测报告
Test Report

2.1 摘要 Summary

根据分析结果，所提交样品中 73 种 SVHC 浓度小于 0.1%（w/w）。
According to the analytical results, concentrations of 73 SVHC substances are less than 0.1% (w/w) in the submitted sample.

2.2 检测依据 Test Method

序号 No.	物质名称 Substance Name	测试方法及仪器 Test Method and Equipments	物质分类 Substance Classification	检出限 Report Limit
1	蒽 Anthracene	参考 US EPA 3550C:2007& US EPA 8270D:2007, GC-MS Refer to US EPA 3550C:2007& US EPA 8270D:2007, GC-MS	持久性,生物积累性和毒性物质 PBT	0.00002%
2	4,4'-二氨基二苯基甲烷 4,4'- iaminodiphenylmethane	参考 US EPA 8270D:2007, GC-MS Refer to US EPA 8270D:2007, GC-MS	第2类致癌性物质 Carcinogen, cat.2	0.005%
3	邻苯二甲酸二丁酯(DBP) Dibutyl phthalate(DBP)	参考 EN 14372:2004, GC-MS Refer to EN 14372:2004, GC-MS	第2类生殖系统毒性物质 Toxic for reproduction, cat.2	0.005%
4	二氯化钴* Cobalt dichloride*	参考 US EPA 3052:1996/ BS EN14582:2007, ICP-OES/IC Refer to US EPA 3052:1996/ BS EN14582:2007, ICP-OES/IC	第2类致癌性物质; 第2类生殖系统毒性物质 Carcinogen, cat.2 Toxic for reproduction, cat.2	0.01%
5	五氧化二砷* Diarsenic pentaoxide*	参考 US EPA 3052:1996, ICP-OES Refer to US EPA 3052:1996, ICP-OES	第1类致癌性物质 Carcinogen, cat.1	0.01%
6	三氧化二砷* Diarsenic trioxide*	参考 US EPA 3052:1996, ICP-OES Refer to US EPA 3052:1996, ICP-OES	第1类致癌性物质 Carcinogen, cat.1	0.01%
7	重铬酸钠* Sodium dichromate*	参考 US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis Refer to US EPA 3052:1996/ US EPA 3060A:1996,ICP-OES/UV-Vis	第2类致癌性物质 第2类致畸性物质 第2类生殖系统毒性物质 Carcinogen, cat.2 Mutagen, cat.2 Toxic for reproduction, cat.2	0.01%

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8	二甲苯麝香 Musk xylene	参考 US EPA 3540C:1996, GC-MS Refer to US EPA 3540C:1996, GC-MS	高持久性和高度生物积累性物质 vPvB	0.005%
9	邻苯二甲酸二(2-乙基己基)酯 (DEHP) Bis(2-ethyl(hexyl) phthalate) (DEHP)	参考 EN 14372:2004, GC-MS Refer to EN 14372:2004, GC-MS	第2类生殖系统毒性物质 Toxic for reproduction, cat.2	0.005%
10	六溴环十二烷(HBCDD) Hexabromocyclododecane(HBCDD)	参考 US EPA 3540C:1996, GC-MS Refer to US EPA 3540C:1996, GC-MS	持久性，生物积累性和毒性物质 PBT	0.005%
11	短链氯化石蜡(SCCPs) Short Chain Chlorinated Paraffins(SCCPs)	参考 US EPA 3540C:1996, GC-MS Refer to US EPA 3540C:1996, GC-MS	持久性，生物积累性和毒性物质；高持久性和高度生物积累性物质 PBT,vPvB	0.01%
12	三丁基氧化锡(TBTO)* Bis(tributyltin)oxide(TBTO)*	参考 ISO 17353:2004 ICP-OES/GC-MS Refer to ISO 17353:2004 ICP-OES/GC-MS	持久性，生物积累性和毒性物质 PBT	0.005%
13	砷酸氢铅* Lead hydrogen arsenate*	参考 US EPA 3052:1996, ICP-OES Refer to US EPA 3052:1996, ICP-OES	第1类致癌性物质 第1类生殖系统毒性物质 Carcinogen, cat.1 Toxic for reproduction, cat.1	0.01%
14	邻苯二甲酸丁基苄酯(BBP) Benzyl butyl phthalate(BBP)	参考 EN 14372:2004, GC-MS Refer to EN 14372:2004, GC-MS	第2类生殖系统毒性物质 Toxic for reproduction, cat.2	0.005%
15	三乙基砷酸酯* Triethyl arsenate*	参考 US EPA 3052:1996, ICP-OES Refer to US EPA 3052:1996, ICP-OES	第1类致癌性物质Carcinogen, cat.1	0.01%
16	①蒽油 ①Anthracene oil	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	持久性,生物积累性和毒性物质 PBT	0.05%
17	①蒽油,蒽糊,轻油**** ①Anthracene oil, anthracene paste,distn. Lights ****	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	持久性,生物积累性和毒性物质 PBT	0.05%

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18	①蒽油,蒽糊,蒽馏分 ①Anthracene oil, anthracene paste,anthracene fraction	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	持久性,生物积累性和毒性物质 PBT	0.05%
19	①蒽油,含蒽量少 ①Anthracene oil, anthracene-low	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	持久性,生物积累性和毒性物质 PBT	0.05%
20	①蒽油,蒽糊 ①Anthracene oil, anthracene paste	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	持久性,生物积累性和毒性物质 PBT	0.05%
21	①煤焦油沥青,高温 ①Coal tar pitch, high temperature	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	持久性,生物积累性和毒性物质,第2类致癌性物质 PBT; Carcinogen, cat.2	0.05%
22	丙烯酰胺 Acrylamide	参考 US EPA 3550C:2007, HPLC Refer to US EPA 3550C:2007, HPLC	第2类致癌性物质; 第2类致畸性物质 Carcinogen, cat.2; Mutagen, cat.2	0.01%
23	②硅酸铝耐火陶瓷纤维 ②Aluminiosilicate, Refractory Ceramic Fibres	参考 US EPA 3052:1996, ICP-OES/SEM-EDS Refer to US EPA 3052:1996, ICP-OES/SEM-EDS	第2类致癌性物质 Carcinogen, cat.2	0.05%
24	②氧化锆硅酸铝耐火陶瓷纤维 ②Zirconia Aluminosilicate, Refractory Ceramic Fibres	参考 US EPA 3052:1996, ICP-OES/SEM-EDS Refer to US EPA 3052:1996, ICP-OES/SEM-EDS	第2类致癌性物质 Carcinogen, cat.2	0.05%
25	2,4-二硝基甲苯 2,4-Dinitrotoluene	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	第2类致癌性物质 Carcinogen, cat.2	0.01%
26	邻苯二甲酸二异丁酯(DIBP) Diisobutyl phthalate (DIBP)	参考 EN 14372:2004, GC-MS Refer to EN 14372:2004, GC-MS	第2类生殖系统毒性物质 Toxic for reproduction, cat.2	0.005%

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序号 No.	物质名称 Substance Name	测试方法及仪器 Test Method and Equipments	物质分类 Substance Classification	检出限 Report Limit
27	①铬酸铅 ②Lead chromate	参考 US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis	第2类致癌性物质; 第1类生殖系统毒性物质 Carcinogen, cat.2; Toxic for reproduction, cat.1	0.05%
28	①钼铬红(C.I.颜料红 104)*** ②Lead chromate molybdate sulphate red (C.I. Pigment Red 104)***	参考 US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis	第2类致癌性物质; 第1类生殖系统毒性物质 Carcinogen, cat.2; Toxic for reproduction, cat.1	0.05%
29	①铅铬黄(C.I.颜料黄 34)*** ②Lead sulfochromate yellow (C.I. Pigment Yellow 34)***	参考 US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis	第2类致癌性物质; 第1类生殖系统毒性物质 Carcinogen, cat.2; Toxic for reproduction, cat.1	0.05%
30	磷酸三(2-氯乙基)酯(TCEP) Tris(2-chloroethyl)phosphate (TCEP)	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	第2类生殖系统毒性物质 Toxic for reproduction, cat.2	0.05%
31	三氯乙烯 Trichloroethylene	参考 US EPA 5021:1996, Headspace-GC/MS Refer to US EPA 5021:1996, Headspace-GC/MS	第2类致癌性物质 Carcinogen, cat.2	0.005%
32	①硼酸 ②Boric acid	参考 US EPA 3052:1996,ICP-OES Refer to US EPA 3052:1996, ICP-OES	第2类生殖系统毒性物质 Toxic for reproduction,cat.2	0.01%
33	①四硼酸钠，无水***** ②Disodium tetraborate, anhydrous*****	参考 US EPA 3052:1996,ICP-OES Refer to US EPA 3052:1996, ICP-OES	第2类生殖系统毒性物质 Toxic for reproduction,cat.2	0.01%
34	①四硼酸钠，水合物***** ②Tetraboron disodium heptaoxide, hydrate*****	参考 US EPA 3052:1996, ICP-OES Refer to US EPA 3052:1996, ICP-OES	第2类生殖系统毒性物质 Toxic for reproduction,cat.2	0.01%

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序号 No.	物质名称 Substance Name	测试方法及仪器 Test Method and Equipments	物质分类 Substance Classification	检出限 Report Limit
35	铬酸钠* Sodium chromate*	参考 US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-vis Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-vis	第2类致癌性物质; 第2类致畸性物质; 第2类生殖系统毒性物质 Carcinogen, cat.2; Mutagenic cat.2; Toxic for reproduction,cat.2	0.01%
36	铬酸钾* Potassium chromate*	参考 US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-vis Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-vis	第2类致癌性物质; 第2类致畸性物质 Carcinogen, cat.2; Mutagenic cat.2	0.01%
37	重铬酸铵* Ammonium dichromate*	参考 US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-vis Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-vis	第2类致癌性物质; 第2类致畸性物质; 第2类生殖系统毒性物质 Carcinogen, cat.2; Mutagenic cat.2; Toxic for reproduction,cat.2	0.01%
38	重铬酸钾* Potassium dichromate*	参考 US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-vis Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-vis	第2类致癌性物质; 第2类致畸性物质; 第2类生殖系统毒性物质 Carcinogen, cat.2; Mutagenic cat.2; Toxic for reproduction,cat.2	0.01%
39	硫酸钴* Cobalt(II) sulphate*	参考 US EPA 3052:1996 & 内部方法/ICP-OES & IC Refer to US EPA 3052:1996 & in-house method/ICP-OES & IC	第2类生殖系统毒性物质; 第2类致癌性物质 Toxic for reproduction,cat.2; Carcinogen, cat.2	0.01%

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序号 No.	物质名称 Substance Name	测试方法及仪器 Test Method and Equipments	物质分类 Substance Classification	检出限 Report Limit
40	硝酸钴* Cobalt(Ⅱ) dinitrate*	参考 US EPA 3052:1996 & 内部方法/ICP-OES & IC Refer to US EPA 3052:1996 & in-house method/ICP-OES & IC	第2类生殖系统毒性物质; 第2类致癌性物质 Toxic for reproduction,cat.2; Carcinogen, cat 2	0.01%
41	碳酸钴* Cobalt(Ⅱ) carbonate*	参考 US EPA 3052:1996 & 内部方法/ICP-OES & IC Refer to US EPA 3052:1996 & in-house method/ICP-OES & IC	第2类生殖系统毒性物质; 第2类致癌性物质 Toxic for reproduction,cat.2 Carcinogen, cat.2	0.01%
42	醋酸钴* Cobalt(Ⅱ) diacetate*	参考 US EPA 3052:1996 & 内部方法/ICP-OES & IC Refer to US EPA 3052:1996 & in-house method/ICP-OES & IC	第 2 类生殖系统毒性物质; 第 2 类致癌性物质 Toxic for reproduction, cat.2 ; Carcinogen, cat.2	0.01%
43	乙二醇单甲醚 2-Methoxyethanol	参考 US EPA 3550C:2007 /GC-MS Refer to US EPA 3550C:2007 /GC-MS	第 2 类生殖系统毒性物质 Toxic for reproduction, cat.2	0.005%
44	乙二醇单乙醚 2-Ethoxyethanol	参考 US EPA 3550C:2007 /GC-MS Refer to US EPA 3550C:2007 /GC-MS	第 2 类生殖系统毒性物质 Toxic for reproduction, cat.2	0.005%
45	三氧化铬* Chromium trioxide*	参考 US EPA 3052:1996 & US EPA 3060A:1996/ ICP-OES & UV-Vis Refer to US EPA 3052:1996 & US EPA 3060A:1996/ ICP-OES & UV-Vis	第 1 类致癌性物质; 第 2 类致畸性物质 Carcinogen, cat.1; Mutagenic cat.2	0.01%
46	从三氧化铬产生的酸类以及它们的齐聚物：铬酸、重铬酸、铬酸和重铬酸的齐聚物* Acids generated from chromium trioxide and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid*	参考 US EPA 3052:1996 & US EPA 3060A:1996/ ICP-OES & UV-Vis Refer to US EPA 3052:1996 & US EPA 3060A:1996/ ICP-OES & UV-Vis	第 2 类致癌性物质 Carcinogen, cat.2	0.01%

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47	乙二醇乙醚乙酸酯 2-ethoxyethyl acetate	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	第 2 类生殖系统毒性物质 Toxic for reproduction,cat.2	0.01%
48	铬酸锶* Strontium chromate*	参考 US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis	第 2 类致癌性物质 Carcinogen, cat.2	0.01%
49	①1,2-苯二酸-二(C7-11 支链与直链)烷基(醇)酯 ①1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	参考 EN14372:2004, GC-MS Refer to EN14372:2004, GC-MS	第 2 类生殖系统毒性物质 Toxic for reproduction,cat.2	0.01%
50	水合肼 Hydrazine	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	第 2 类致癌性物质 Carcinogen, cat.2	0.01%
51	N-甲基吡咯烷酮 1-methyl-2-pyrrolidone	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	第 2 类生殖系统毒性物质 Toxic for reproduction,cat.2	0.01%
52	1，2，3-三氯丙烷 1,2,3-trichloropropane	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	第 2 类致癌性物质； 第 2 类生殖系统毒性物质 Carcinogen, cat.2 Toxic for reproduction, cat.2	0.01%
53	①邻苯二甲酸二 C6-8 支链烷基酯(C7 富集) ①1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	参考 EN14372:2004, GC-MS Refer to EN14372:2004, GC-MS	第 2 类生殖系统毒性物质 Toxic for reproduction, cat.2	0.01%

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序号 No.	物质名称 Substance Name	测试方法及仪器 Test Method and Equipments	物质分类 Substance Classification	检出限 Report Limit
54	铬酸铬* Dichromium tris(chromate)*	参考 US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis	第 2 类致癌性物质 Carcinogen, cat.2	0.01%
55	氢氧化铬酸锌钾* Potassium hydroxyoctaoxodizincatedichromate*	参考 US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis	第 1 类致癌性物质 Carcinogen, cat.1	0.01%
56	氢氧化铬酸锌* Pentazinc chromate octahydroxide*	参考 US EPA 3052:1996/US EPA 3060A:1996, ICP-OES/UV-Vis Refer to US EPA 3052:1996/US EPA 3060A:1996, ICP-OES/UV-Vis	第 1 类致癌性物质 Carcinogen, cat.1	0.01%
57	②硅酸铝耐火陶瓷纤维** ②Aluminosilicate Refractory Ceramic Fibres (RCF) **	参考 US EPA 3052:1996, ICP-OES/SEM-EDS Refer to US EPA 3052:1996, ICP-OES/SEM-EDS	第 2 类致癌性物质 Carcinogen, cat.2	0.05%
58	②氧化锆硅酸铝耐火陶瓷纤维** ②Zirconia Aluminosilicate Refractory Ceramic Fibres (Zr-RCF) **	参考 US EPA 3052:1996, ICP-OES/SEM-EDS Refer to US EPA 3052:1996, ICP-OES/SEM-EDS	第 2 类致癌性物质 Carcinogen, cat.2	0.05%
59	①甲醛苯胺共聚物 ①Formaldehyde, oligomeric reaction products with aniline (technical MDA)	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	第 2 类致癌性物质 Carcinogen, cat.2	0.01%
60	邻苯二甲酸二甲氧基乙酯 Bis(2-methoxyethyl) phthalate	参考 EN14372:2004,GC-MS Refer to EN 14372:2004, GC-MS	第 2 类生殖系统毒性物质 Toxic for reproduction,cat.2	0.005%
61	2-甲氧基苯胺(邻甲氧基苯胺) 2-Methoxyaniline (o-Anisidine)	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	第 2 类致癌性物质 Carcinogen, cat.2	0.005%

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序号 No.	物质名称 Substance Name	测试方法及仪器 Test Method and Equipments	物质分类 Substance Classification	检出限 Report Limit
62	4-(1,1,3,3-四甲基丁基)苯酚 (别名：对特辛基苯酚) 4-(1,1,3,3-tetramethylbutyl)phenol (4-tert-Octylphenol)	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	具有与 CMR, PBT/vPvB 同等危害的内分泌干扰物 Equivalent concern▲	0.005%
63	1,2-二氯乙烷 1,2-Dichloroethane	参考 US EPA 5021:1996; Headspace-GC/MS Refer to US EPA 5021:1996; Headspace-GC/MS	第 2 类致癌性物质 Carcinogen, cat.2	0.005%
64	双(2-甲氧基乙基)醚 (别名：二乙二醇二甲醚) Bis(2-methoxyethyl) ether	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	第 2 类致癌性物质 Carcinogen, cat.2	0.005%
65	砷酸* Arsenic acid*	参考 US EPA 3052:1996, ICP-OES Refer to US EPA 3052:1996, ICP-OES	第 1 类致癌性物质 Carcinogen, cat.1	0.01%
66	砷酸钙* Calcium arsenate*	参考 US EPA 3052:1996, ICP-OES Refer to US EPA 3052:1996, ICP-OES	第 1 类致癌性物质 Carcinogen, cat.1	0.01%
67	砷酸铅* Trilead diarsenate*	参考 US EPA 3052:1996, ICP-OES Refer to US EPA 3052:1996, ICP-OES	第 1 类致癌性物质; 第 1 类生殖系统毒性物质 Carcinogen, cat.1; Toxic for reproduction, cat.1	0.01%
68	N,N-二甲基乙酰胺(DMAC) N,N-dimethylacetamide (DMAC)	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	第 2 类致癌性物质 Carcinogen, cat.2	0.005%
69	4,4'-亚甲基双(2-氯苯胺) (MOCA) 2,2'-dichloro-4,4'-methylenedianiline (MOCA)	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	第 2 类致癌性物质 Carcinogen, cat.2	0.005%
70	酚酞 Phenolphthalein	参考 US EPA 3550C:2007, GC-MS Refer to US EPA 3550C:2007, GC-MS	第 2 类致癌性物质 Carcinogen, cat.2	0.005%

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71	叠氮化铅* Lead diazide*	参考 US EPA 3052:1996, ICP-OES Refer to US EPA 3052:1996, ICP-OES	第 1 类生殖系统毒性物质 Toxic for reproduction,cat.1	0.01%
72	2,4,6-三硝基间苯二酚铅(别名：收敛酸铅) * Lead 2,4,6-trinitro-m-phenylene dioxide (Lead styphnate) *	参考 US EPA 3052:1996, ICP-OES Refer to US EPA 3052:1996, ICP-OES	第 1 类生殖系统毒性物质 Toxic for reproduction,cat.1	0.01%
73	苦味酸铅* Lead dipicrate*	参考 US EPA 3052:1996, ICP-OES Refer to US EPA 3052:1996, ICP-OES	第 1 类生殖系统毒性物质 Toxic for reproduction,cat.1	0.01%

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2.3 检测结果 Test Result

序号 No.	物质名称 Substance Name(s)	CAS 号 CAS No.	EC 号 EC No.	浓度 Concentration (%)
1	蒽 Anthracene	120-12-7	204-371-1	N.D.
2	4,4'-二氨基二苯基甲烷 4,4'- iaminodiphenylmethane	101-77-9	202-974-4	N.D.
3	邻苯二甲酸二丁酯(DBP) Dibutyl phthalate(DBP)	84-74-2	201-557-4	N.D.
4	二氯化钴* Cobalt dichloride*	7646-79-9	231-589-4	N.D.
5	五氧化二砷* Diarsenic pentaoxide*	1303-28-2	215-116-9	N.D.
6	三氧化二砷* Diarsenic trioxide*	1327-53-3	215-481-4	N.D.
7	重铬酸钠* Sodium dichromate*	7789-12-0/ 10588-01-9	234-190-3	N.D.
8	二甲苯麝香 Musk xylene	81-15-2	201-329-4	N.D.
9	邻苯二甲酸二(2-乙基己基)酯 (DEHP) Bis(2-ethyl(hexyl) phthalate (DEHP)	117-81-7	204-211-0	N.D.
10	六溴环十二烷(HBCDD) Hexabromocyclododecane(HBCDD)	25637-99-4/ 3194-55-6	247-148-4/ 221-695-9	N.D.
11	短链氯化石蜡(SCCPs) Short Chain Chlorinated Paraffins(SCCPs)	85535-84-8	287-476-5	N.D.
12	三丁基氧化锡(TBTO)* Bis(tributyltin)oxide(TBTO)*	56-35-9	200-268-0	N.D.

检测报告
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2.3 检测结果 Test Result

序号 No.	物质名称 Substance Name(s)	CAS 号 CAS No.	EC 号 EC No.	浓度 Concentration (%)
13	砷酸氢铅* Lead hydrogen arsenate*	7784-40-9	232-064-2	N.D.
14	邻苯二甲酸丁基苄酯(BBP) Benzyl butyl phthalate(BBP)	85-68-7	201-622-7	N.D.
15	三乙基砷酸酯* Triethyl arsenate*	15606-95-8	427-700-2	N.D.
16	①蒽油 ①Anthracene oil	90640-80-5	292-602-7	N.D.
17	①蒽油,蒽糊,轻油**** ①Anthracene oil, anthracene paste,distn. Lights****	91995-17-4	295-278-5	N.D.
18	①蒽油,蒽糊,蒽馏分 ①Anthracene oil, anthracene paste,anthracene fraction	91995-15-2	295-275-9	N.D.
19	①蒽油,含蒽量少 ①Anthracene oil, anthracene-low	90640-82-7	292-604-8	N.D.
20	①蒽油,蒽糊 ①Anthracene oil, anthracene paste	90640-81-6	292-603-2	N.D.
21	①煤焦油沥青,高温 ①Coal tar pitch, high temperature	65996-93-2	266-028-2	N.D.
22	丙烯酰胺 Acrylamide	79-06-1	201-173-7	N.D.
23	②硅酸铝耐火陶瓷纤维 ②Aluminiosilicate, Refractory Ceramic Fibres	-	650-017-00-8**	N.D.
24	②氧化锆硅酸铝耐火陶瓷纤维 ②Zirconia Aluminosilicate, Refractory Ceramic Fibres	-	650-017-00-8**	N.D.

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Test Report

2.3 检测结果 Test Result

序号 No.	物质名称 Substance Name(s)	CAS 号 CAS No.	EC 号 EC No.	浓度 Concentration (%)
25	2,4-二硝基甲苯 2,4-Dinitrotoluene	121-14-2	204-450-0	N.D.
26	邻苯二甲酸二异丁酯(DIBP) Diisobutyl phthalate (DIBP)	84-69-5	201-553-2	N.D.
27	[6]铬酸铅 [6]Lead chromate	7758-97-6	231-846-0	N.D.
28	[6]钼铬红(C.I.颜料红 104)*** [6]Lead chromate molybdate sulphate red (C.I. Pigment Red 104)***	12656-85-8	235-759-9	N.D.
29	[6]铅铬黄(C.I.颜料黄 34)*** [6]Lead sulfochromate yellow (C.I. Pigment Yellow 34)***	1344-37-2	215-693-7	N.D.
30	磷酸三(2-氯乙基)酯(TCEP) Tris(2-chloroethyl)phosphate (TCEP)	115-96-8	204-118-5	N.D.
31	三氯乙烯 Trichloroethylene	79-01-6	201-167-4	N.D.
32	[5]硼酸 [5]Boric acid	10043-35-3 11113-50-1	233-139-2 234-343-4	N.D.
33	[5]四硼酸钠，无水***** [5]Disodium tetraborate, anhydrous*****	1330-43-4 12179-04-3 1303-96-4	215-540-4	N.D.
34	[5]四硼酸钠，水合物***** [5]Tetraboron disodium heptaoxide, hydrate*****	12267-73-1	235-541-3	N.D.
35	铬酸钠* Sodium chromate*	7775-11-3	231-889-5	N.D.
36	铬酸钾* Potassium chromate*	7789-00-6	232-140-5	N.D.

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2.3 检测结果 Test Result

序号 No.	物质名称 Substance Name(s)	CAS 号 CAS No.	EC 号 EC No.	浓度 Concentration (%)
37	重铬酸铵* Ammonium dichromate*	7789-09-5	232-143-1	N.D.
38	重铬酸钾* Potassium dichromate*	7778-50-9	231-906-6	N.D.
39	硫酸钴* Cobalt(II) sulphate*	10124-43-3	233-334-2	N.D.
40	硝酸钴* Cobalt(II) dinitrate*	10141-05-6	233-402-1	N.D.
41	碳酸钴* Cobalt(II) carbonate*	513-79-1	208-169-4	N.D.
42	醋酸钴* Cobalt(II) diacetate*	71-48-7	200-755-8	N.D.
43	乙二醇单甲醚 2-Methoxyethanol	109-86-4	203-713-7	N.D.
44	乙二醇单乙醚 2-Ethoxyethanol	110-80-5	203-804-1	N.D.
45	三氧化铬* Chromium trioxide*	1333-82-0	215-607-8	N.D.
46	从三氧化铬产生的酸类以及它们的齐聚物：铬酸、重铬酸、铬酸和重铬酸的齐聚物* Acids generated from chromium trioxide and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid*	7738-94-5 13530-68-2	231-801-5 236-881-5	N.D.
47	乙二醇乙醚乙酸酯 2-ethoxyethyl acetate	111-15-9	203-839-2	N.D.

检测报告
Test Report

2.3 检测结果 Test Result

序号 No.	物质名称 Substance Name(s)	CAS 号 CAS No.	EC 号 EC No.	浓度 Concentration (%)
48	铬酸锶* Strontium chromate*	7789-06-2	232-142-6	N.D.
49	①1,2-苯二酸-二(C7-11 支链与直链)烷基(醇)酯 ①1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	271-084-6	N.D.
50	水合肼 Hydrazine	7803-57-8 302-01-2	206-114-9	N.D.
51	N-甲基吡咯烷酮 1-methyl-2-pyrrolidone	872-50-4	212-828-1	N.D.
52	1，2，3-三氯丙烷 1,2,3-trichloropropane	96-18-4	202-486-1	N.D.
53	①邻苯二甲酸二 C6-8 支链烷基酯(C7 富集) ①1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	276-158-1	N.D.
54	铬酸铬* Dichromium tris(chromate)*	24613-89-6	246-356-2	N.D
55	氢氧化铬酸锌钾* Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	234-329-8	N.D.
56	氢氧化铬酸锌* Pentazinc chromate octahydroxide*	49663-84-5	256-418-0	N.D.
57	②硅酸铝耐火陶瓷纤维** ②Aluminosilicate Refractory Ceramic Fibres (RCF) **	-	-	N.D.
58	②氧化锆硅酸铝耐火陶瓷纤维** ②Zirconia Aluminosilicate Refractory Ceramic Fibres (Zr-RCF) **	-	-	N.D.

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Test Report

2.3 检测结果 Test Result

序号 No.	物质名称 Substance Name(s)	CAS 号 CAS No.	EC 号 EC No.	浓度 Concentration (%)
59	①甲醛苯胺共聚物 ①Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4	500-036-1	N.D.
60	邻苯二甲酸二甲氧基乙酯 Bis(2-methoxyethyl) phthalate	117-82-8	204-212-6	N.D.
61	2-甲氧基苯胺(邻甲氧基苯胺) 2-Methoxyaniline (o-Anisidine)	90-04-0	201-963-1	N.D.
62	4-(1,1,3,3-四甲基丁基)苯酚 (别名：对特辛基苯酚) 4-(1,1,3,3-tetramethylbutyl)phenol (4-tert-Octylphenol)	140-66-9	205-426-2	N.D.
63	1,2-二氯乙烷 1,2-Dichloroethane	107-06-2	203-458-1	N.D.
64	双(2-甲氧基乙基)醚 (别名：二乙二醇二甲醚) Bis(2-methoxyethyl) ether	111-96-6	203-924-4	N.D.
65	砷酸* Arsenic acid*	7778-39-4	231-901-9	N.D.
66	砷酸钙* Calcium arsenate*	7778-44-1	231-904-5	N.D.
67	砷酸铅* Trilead diarsenate*	3687-31-8	222-979-5	N.D.
68	N,N-二甲基乙酰胺(DMAC) N,N-dimethylacetamide (DMAC)	127-19-5	204-826-4	N.D.
69	4,4'-亚甲基双(2-氯苯胺) (MOCA) 2,2'-dichloro-4,4'-methylenedianiline (MOCA)	101-14-4	202-918-9	N.D.

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Test Report

2.3 检测结果 Test Result

序号 No.	物质名称 Substance Name(s)	CAS 号 CAS No.	EC 号 EC No.	浓度 Concentration (%)
70	酚酞 Phenolphthalein	77-09-8	201-004-7	N.D.
71	叠氮化铅* Lead diazide*	13424-46-9	236-542-1	N.D.
72	2,4,6-三硝基间苯二酚铅(别名：收敛酸铅)* Lead 2,4,6-trinitro-m-phenylene dioxide (Lead styphnate) *	15245-44-0	239-290-0	N.D.
73	苦味酸铅* Lead dipicrate*	6477-64-1	229-335-2	N.D.

注释 Note:

1.-w/w % = 重量百分比
- w/w = weight by weight

2.-N.D. = 未检出 (小于检出限)
-N.D. = Not Detected (<report limit)

3.-0.1% = 1000 mg/kg = 1000 ppm
-0.1%= 1000 mg/kg =1000 ppm

4.-PBT = Persistent,Bioaccumulative,Toxic; vPvB=very Persistent very Bioaccumulative

5.-▲= An equivalent level of concern as exerted by CMR or. PBT/vPvB substances.

6. -*:二氯化钴、五氧化二砷、三氧化二砷、重铬酸钠、砷酸氢铅、三乙基砷酸酯、铬酸锶、铬酸钠、铬酸钾、重铬酸铵、重铬酸钾、硫酸钴、硝酸钴、碳酸钴、醋酸钴、三氧化铬、铬酸、重铬酸、铬酸和重铬酸的齐聚物、铬酸铬、氢氧化铬酸锌钾、氢氧化铬酸锌、砷酸钙、砷酸铅、砷酸、叠氮化铅、2,4,6-三硝基间苯二酚铅(收敛酸铅)、苦味酸铅的浓度值是由物质中的特征元素测试结果换算而来。
三丁基氧化锡的浓度值是由三丁基锡结果换算而来。

-*:Concentration value of Cobalt dichloride, Diarsenic pentaoxide; Diarsenic trioxide; Sodium dichromate; Lead hydrogen arsenate; Triethyl arsenate; Strontium chromate; Sodium chromate, Potassium chromate; Ammonium dichromate; Potassium dichromate; Cobalt(Ⅱ) sulphate; Cobalt(Ⅱ) dinitrate; Cobalt(Ⅱ) carbonate; Cobalt(Ⅱ) diacetate; Chromium trioxide; Chromic acid, Dichromic acid, and Oligomers of chromic acid and dichromic acid; Dichromium tris(chromate); Potassium hydroxyoctaoxodizincatedichromate; Pentazinc chromate octahydroxide; Calcium arsenate; Trilead diarsenate; Arsenic acid; Lead diazide; Lead 2,4,6-trinitro-m-phenylene dioxide (Lead styphnate); Lead dipicrate by the conversion from the test results of certain elements.
Concentration value of Bis(tributyltin)oxide by the conversion from the test results of Tributyl Tins.

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7. -**: 在化学物质及其混合物的分类，标记与包装法规，即 CLP 法规(法规(EC)No 1272/2008)的附录 VI 中，索引号 650-017-00-8 适用于所有的耐火陶瓷纤维材料。

-** All refractory ceramic fibres are covered by index number 650-017-00-8 in Annex VI of the Regulation on Classification, Labeling and Packaging of chemical substances and mixtures, the so called CLP Regulation (Regulation (EC) No 1272/2008).

8.-***:C.I 颜料索引号

-***: C.I.: Colour Index

9.-****: 蒸馏所分离出来的轻油部分

-****:Light fractions from distillation

10. -*****: 四硼酸钠，无水和四硼酸钠，水合物的浓度均由四硼酸钠浓度表示，没有考虑结晶水。

-*****: Concentration value of Disodium tetraborate, anhydrous and Tetraboron disodium heptaoxide, hydrate is evaluated by Disodium tetraborate, with no consider of the hydrate

11.-①: 由于这些物质是 UVCB 物质(未知成分或可变成分的，复杂反应物或生物材料的物质)，由各种不同的成分组成，所以这些物质的测试结果是由选定的具有代表性的物质的主要组成成分的测试结果换算而来的。

-①: In view of the substances are established as UVCB substances (substances of unknown or variable composition, complex reaction products or biological materials) consisting of different and variable constituents, the test results are calculated based on the main constituents of the representative compounds for substances.

12.-②: 由于此物质含有多种物质，测试结果是基于此物质中最具有代表性的主要组成化合物的含量，其主要造成化合物的测试结果是基于特定的重金属元素的浓度换算而来。

-② In view of the substance contain variable substances, the test results are calculated based on main constituents of the representative compounds for the substances, and the test results of the representative compounds are calculated based on the result of specified heavy metal elements.

13. -③: 硼酸；四硼酸钠，无水；四硼酸钠，水合物的浓度值是由物质中的特征元素测试结果换算而来，并用适当溶剂萃取进行确认，同时建议客户检查化学配方表进一步确认是否含有上述化合物。

-③: Concentration value of Boric acid;Disodium tetraborate, anhydrous;Tetraboron disodium heptaoxide, hydrate are calculated by the conversion from the test results of corresponding elements and confirmed by appropriate solvent extraction, meanwhile the book of materials is suggested to be checked for further confirmation.

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2.4 附加信息 Appendix

1.根据欧盟 REACH 法规（编号 1907/2006）第 33 条款之规定，物品类产品如果含有候选列表上的高度关注物质且在物品中的质量百分比超过 0.1%时，物品供应方需履行相关信息传递义务

Any supplier of an article containing a substance that is included in the Candidate List in a concentration above 0.1% weight by weight (w/w) has the duty to communicate information in accordance with Article 33 of European Union regulation concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

1)物品供应方应提供给接收方关于产品的足够信息以确保物品的安全使用，至少需提供所含高度关注物质的名称。

Any supplier shall provide the recipient of the article with sufficient information to allow safe use of the article including, as a minimum, the name of that substance.

2)应消费者请求，物品供应方应在 45 天内免费提供关于产品的足够信息以确保物品的安全使用，至少需提供所含高度关注物质的名称。

On request by a consumer any supplier shall provide the consumer with sufficient information to allow safe use of the article including, as a minimum, the name of that substance within 45 days of receipt of the request, free of charge.

2.根据欧盟 REACH 法规（编号 1907/2006）第 31 条款及附件 2 之规定，提供高度关注物质的物质类产品供应方，应免费提供接收方该物质的安全数据表。

The supplier of a substance that is included in the Candidate List on their own shall provide the recipient of the substance with a safety data sheet for free compiled in accordance with Article 3 and Annex II of REACH.

3.根据欧盟 REACH 法规（编号 1907/2006）第 31、32 条款及附件 2 之规定，提供含有高度关注物质的混合物产品供应方需传递相关信息：

The supplier of a mixture that containing a substance that is included in the Candidate List shall exchange information in accordance with Article 31, Article 32, and Annex II of REACH.

1)如果混合物产品按照 1999/45/EC 被判定为危险品时，供应方应免费提供产品的安全数据表。

Any supplier shall provide the recipient of the mixture with a safety data sheet for free where a preparation meets the criteria for classification as dangerous in accordance with Directives 1999/45/EC.

2)如果混合物产品按照 1999/45/EC 判定并非危险品，但是任一高度关注物质在非气体混合物中质量分数超过 0.1%或在气体混合物中体积分数超过 0.2%，供应方也应免费提供产品的安全数据表。

Any supplier shall provide the recipient of the mixture with a safety data sheet for free where a preparation does not meet the criteria for classification as dangerous in accordance with Directive 1999/45/EC, but contains any substance that is included in the Candidate List in an individual concentration of ≥ 0.1 % by weight for non-gaseous mixtures or ≥ 0.2 % by volume for gaseous mixtures.

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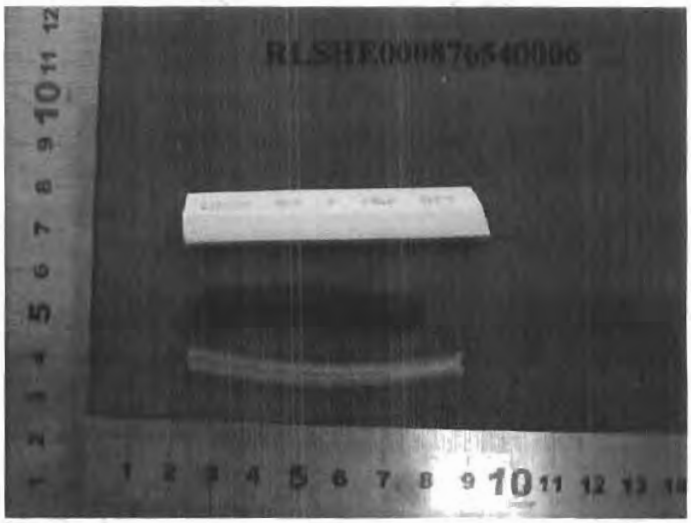
Test Report

样品照片

Photo of sample



*** 报告结束 ***
***End of report ***

TEST REPORT

NO.: A002E11121307-1R02 Date: Dec.15, 2011

Customer: SuZhou FuHong Electronic Industrial Co., Ltd.

Address: NO. 89 WEI DU ROAD, WANGTING TOWN, XIANGCHENG DISTRICT, SUZHOU, CHINA

Report on the submitted sample said to be

Sample name: Copper shell

Model: /

Item/Lot No.: /

Material: /

Description: /

Buyer: /

Supplier: /

Manufacturer: /

Sample received date: Dec.13,2011

Testing period: From Dec.13,2011 to Dec.15,2011

Testing Requested

As specified by client, to determine the Lead, Cadmium, Mercury & Hexavalent Chromium content in the submitted sample in accordance with Directive 2002/95/EC (RoHS).

Testing method:

Testing Item	Pretreatment method	Measuring instrument	MQL
Lead (Pb)	IEC 62321: 2008, section 9	ICP-OES	2mg/kg
Cadmium (Cd)	IEC 62321: 2008, section 9	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321: 2008, section 7	ICP-OES	2 mg/kg
Chromium (Cr VI)	IEC 62321: 2008, Annex B	UV-VIS	0.02mg/kg*

Note:

-* 0.02 mg/kg refers to the MQL of sample extraction liquid.

Conclusion:

-When tested as specified the submitted sample complied with the requirements of commission Decision of 18 Aug 2005 amending Directive 2002/95/EC notified under document 2005/618/EC.

******FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)******

Project Leader (Engineer) Maggie

Approved by (Lab manager) Mchang

Inspected by (Technical manager) Weikin

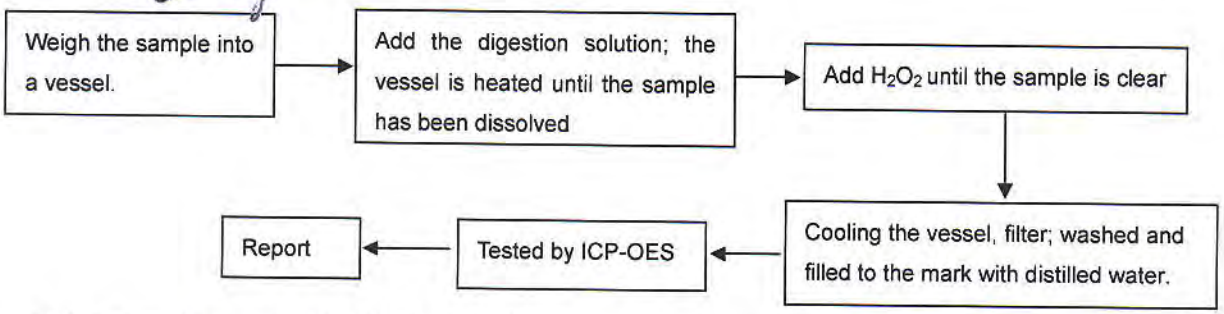
TEST REPORT

NO.: A002E11121307-1R02 Date: Dec.15, 2011

Test Flow:

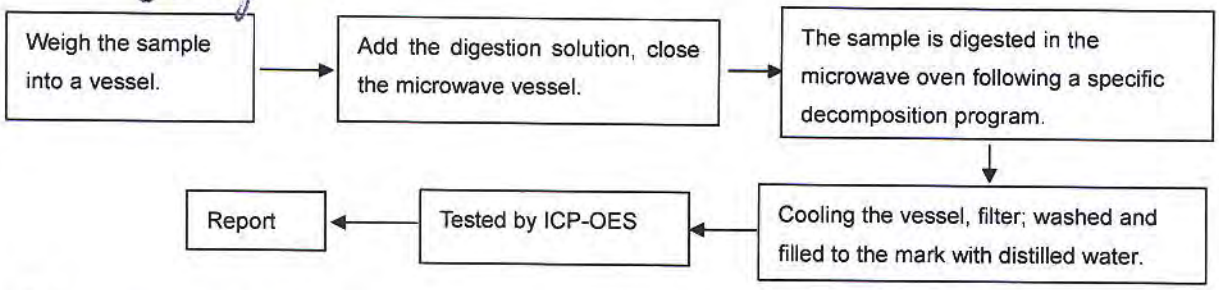
1. To Determine Lead, Cadmium Content: (Metal substrate)

Tested by: Condy



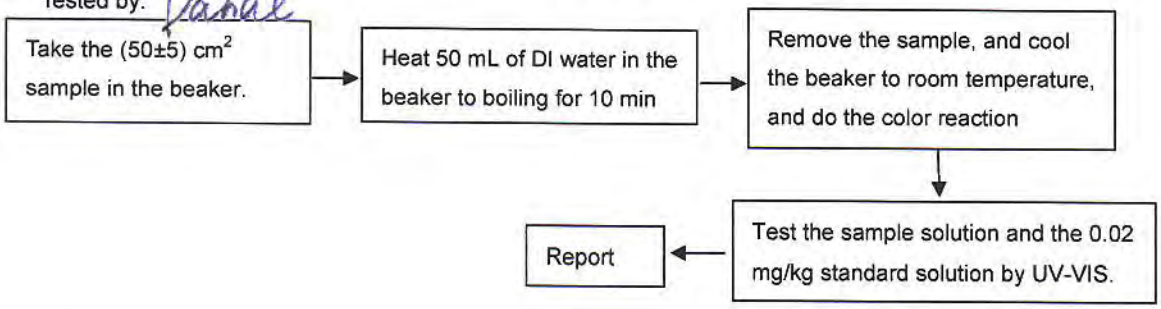
2. To Determine Mercury Content: (Metal substrate)

Tested by: Condy



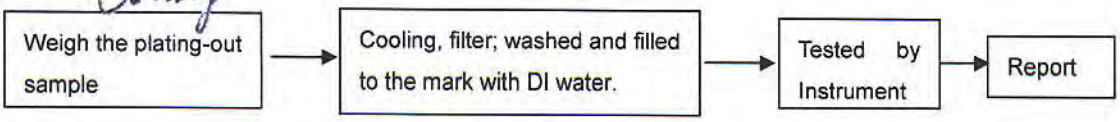
3. To Determine Hexavalent Chromium Content (boiling- water- extraction): (Metal substrate)

Tested by: Danal



4. To Determine Lead, Cadmium and Mercury Content: (Plating)

Tested by: Condy

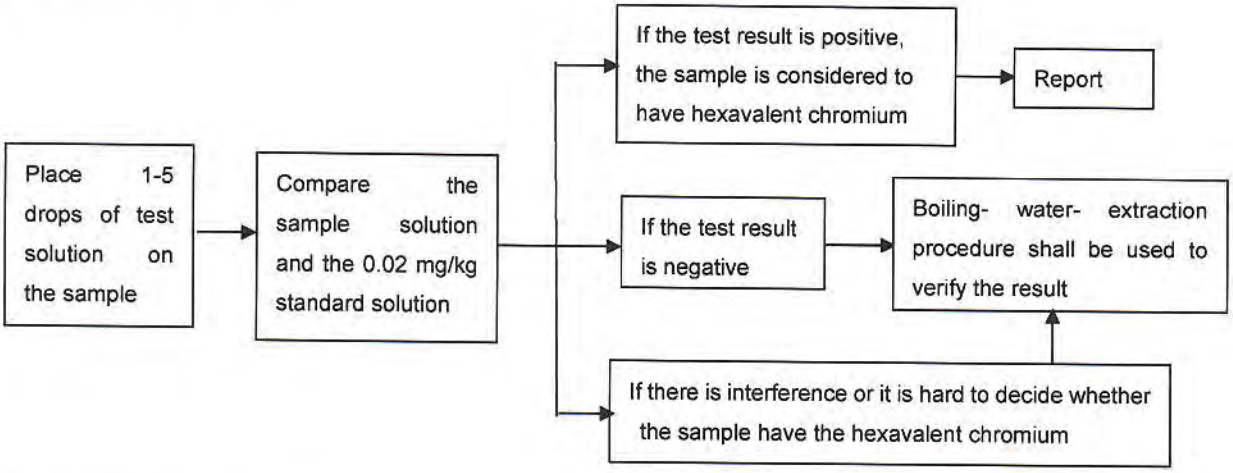


TEST REPORT

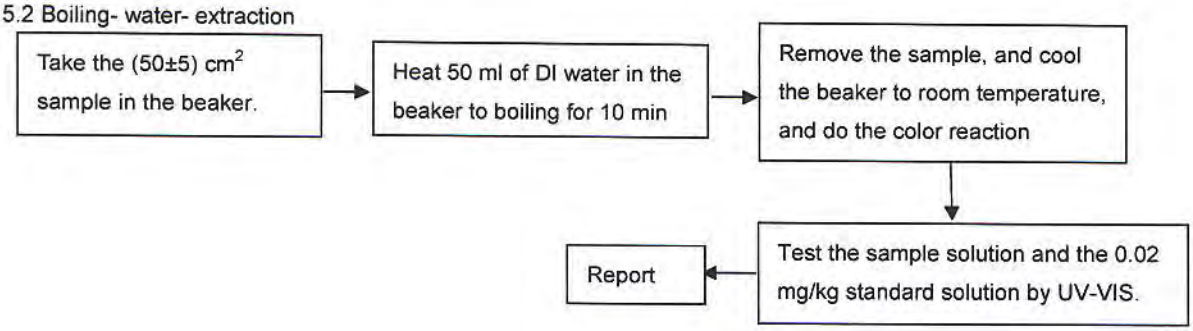
5. To Determine Hexavalent Chromium Content in colorless and colored chromate coating on metals: (Plating)

Tested by: Danal

5.1 Spot-test



5.2 Boiling- water- extraction



Test Results:

Item	Unit	RoHS Limit	Result	
			Substrate	Plating*
Lead (Pb)	mg/kg	1000	N.D.	N.D.
Cadmium (Cd)	mg/kg	100	N.D.	N.D.
Mercury (Hg)	mg/kg	1000	N.D.	N.D.
Chromium (CrⅥ)	mg/kg	1000	Negative	Negative

TEST REPORT

Note:

-The new RoHS directive 2011/65/EU, on Jul. 21, 2011 come into force, on Jan. 03, 2013 the formal implementation, Directive 2002/95/EC shall be repealed simultaneously.

-Specimens, which requested to determine Lead, Cadmium and Mercury Content, have been dissolved completely.

-mg/kg=ppm

-N.D.=not detected(<MQL)

-MQL=Method Quantitation Limit

-Negative=Absence of Cr (VI);
Positive=Presence of Cr (VI);
Uncertain= can not verify whether the sample have Hexavalent Chromium by spot-test.
(The tested sample should be further verified by boiling-water-extraction method if the spot test result is uncertain or negative.)

-*The test is based on the following assumption: The sample plating is a single layer and each part is uniform. The test result maybe cannot stand for the physical truth of sample plating.

-Photo is included

Photograph of Sample

Copper shell

End of Report

Test Report

No. SHAEC1119466001 Date: 13 Dec 2011

DONGGUAN CITY XINHAI METAL PRODUCTS CO.,LTD

I`ST WEIMING ROAD HENGZENG AV.XINAN COMMUNITY CHANGAN TOWN DONGGUAN CITY GUANGDONG PROVINCE

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

SGS Job No. :	SP11-036355 - SH
Composition :	H65
Date of Sample Received :	02 Dec 2011
Testing Period :	02 Dec 2011 - 06 Dec 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 of Lead, Mercury, Cadmium, Hexavalent chromium 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 Ltd.

Fan Jingjie, JJ
Approved Signatory

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
Testing Service Certification
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233
t E&E (86-21) 61402553 f E&E (86-21)64953679 www.cn.sgs.com
HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA11-194660.001	Silver metal base part

Remarks :

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

RoHS Directive 2011/65/EU

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 Spot test / Colorimetric Method using UV-Vis.

Test Item(s)	Limit	Unit	MDL	*001*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	6
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	-	-	◇	Negative

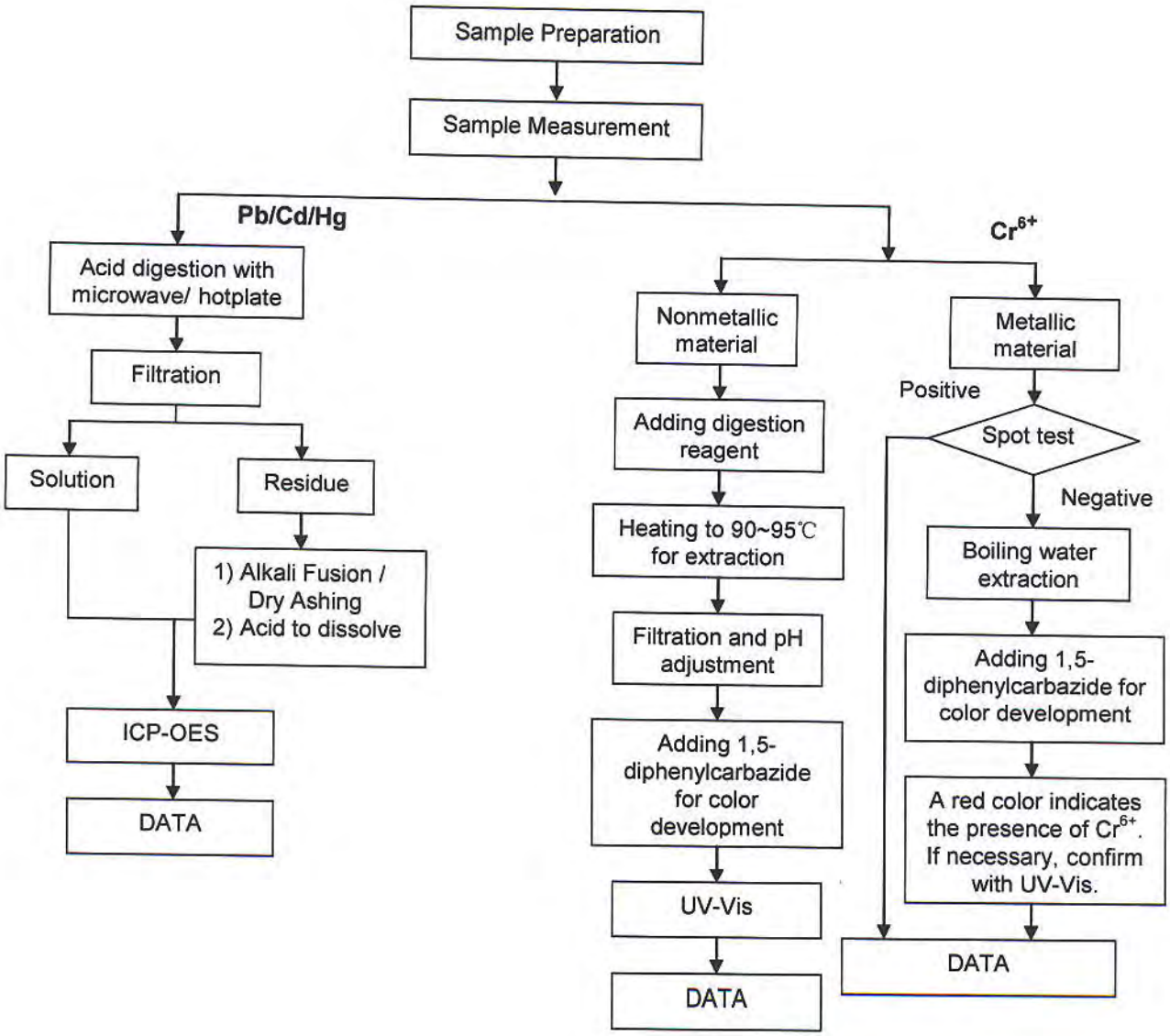
Notes :

(1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II
(2) ◇ = a. Positive means the presence of CrVI on the tested areas;
b. Negative means the absence of CrVI on the tested areas
For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao
2) Name of the person in charge of testing: Jeff Zhang/George Xu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)



Sample photo:

SHA11-194660.001

SGS authenticate the photo on original report only

*** End of Report ***

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

Test Report

No. SHAEC1119466002 Date: 13 Dec 2011

DONGGUAN CITY XINHAI METAL PRODUCTS CO.,LTD

I`ST WEIMING ROAD HENGZENG AV.XINAN COMMUNITY CHANGAN TOWN DONGGUAN CITY GUANGDONG PROVINCE

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

SGS Job No. :	SP11-036355 - SH
Composition :	Ni
Date of Sample Received :	02 Dec 2011
Testing Period :	02 Dec 2011 - 06 Dec 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 selected part of submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits in RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Ltd.

Fan Jingjie, JJ
Approved Signatory

SGS-CSTC Standards Technical Services (Shanghai) Co.,Ltd.
Testing Laboratory Accreditation
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233
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HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA11-194660.002	Silver metal plating part

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 : IEC 62321:2008 application of modified digestion by surface etching for Cadmium, Lead and Mercury, analysis by ICP-OES
With reference to IEC 62321:2008 for Hexavalent Chromium by spot test / Colorimetric Method.

Test Item(s)	Limit	Unit	MDL	*002*
Lead (Pb)	1,000	mg/kg	10	ND
Cadmium (Cd)	100	mg/kg	10	ND
Mercury (Hg)	1,000	mg/kg	10	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative

Notes :

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

(2) ◇ Spot-test:

Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;

The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be confirmed.

◇ Boiling-water-extraction:

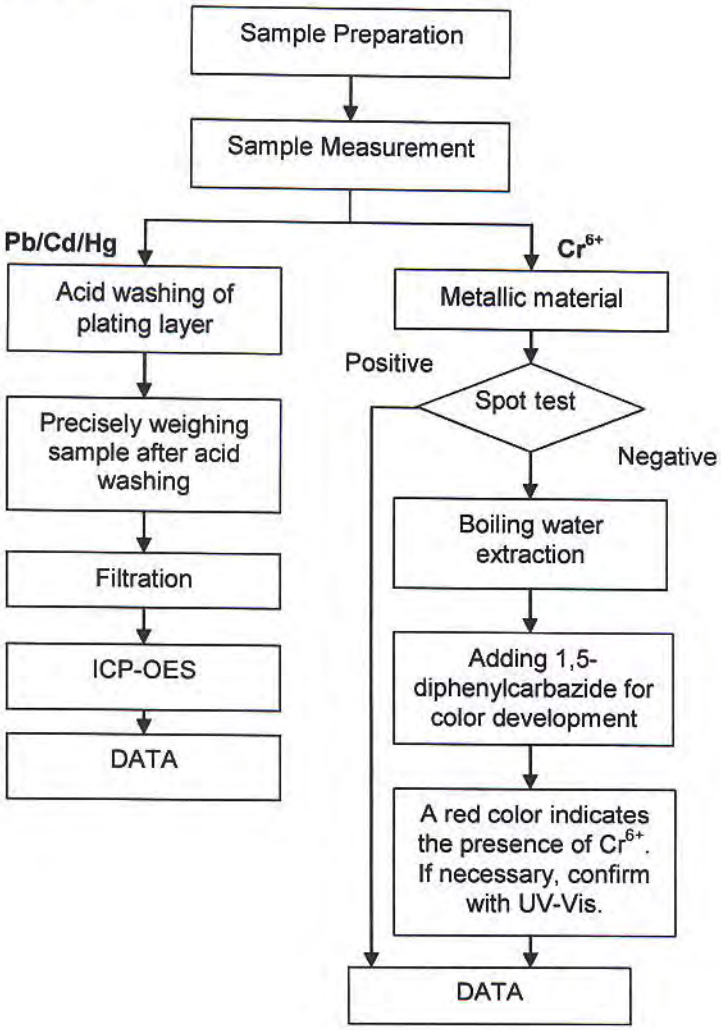
Negative = Absence of CrVI coating; Positive = Presence of CrVI coating

The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm2 sample surface area.

ATTACHMENTS

Plating Pb/Cd/Hg/Cr^{6+} Testing Flow Chart

1) Name of the person who made testing: Yoyo Wang/Allen Xiao
2) Name of the person in charge of testing: Jeff Zhang/George Xu



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

Sample photo:

SHA11-194660.002

SGS authenticate the photo on original report only

*** End of Report ***

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TEST REPORT

NO.: A002E11121307-2R02 Date: Dec.15, 2011

Customer: SuZhou FuHong Electronic Industrial Co., Ltd.

Address: NO. 89 WEI DU ROAD, WANGTING TOWN, XIANGCHENG DISTRICT, SUZHOU, CHINA

Report on the submitted sample said to be

Sample name: Fuses copper shell

Model: /

Item/Lot No.: /

Material: /

Description: /

Buyer: /

Supplier: /

Manufacturer: /

Sample received date: Dec.13,2011

Testing period: From Dec.13,2011 to Dec.15,2011

Testing Requested

As specified by client, to determine the Lead, Cadmium, Mercury & Hexavalent Chromium content in the submitted sample in accordance with Directive 2002/95/EC (RoHS).

Testing method:

Testing Item	Pretreatment method	Measuring instrument	MQL
Lead (Pb)	IEC 62321: 2008, section 9	ICP-OES	2mg/kg
Cadmium (Cd)	IEC 62321: 2008, section 9	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321: 2008, section 7	ICP-OES	2 mg/kg
Chromium (Cr VI)	IEC 62321: 2008, Annex B	UV-VIS	0.02mg/kg*

Note:

-* 0.02 mg/kg refers to the MQL of sample extraction liquid.

Conclusion:

-When tested as specified the submitted sample complied with the requirements of commission Decision of 18 Aug 2005 amending Directive 2002/95/EC notified under document 2005/618/EC.

******FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)******

Project Leader (Engineer) Maggie

Approved by (Lab manager) Mickey

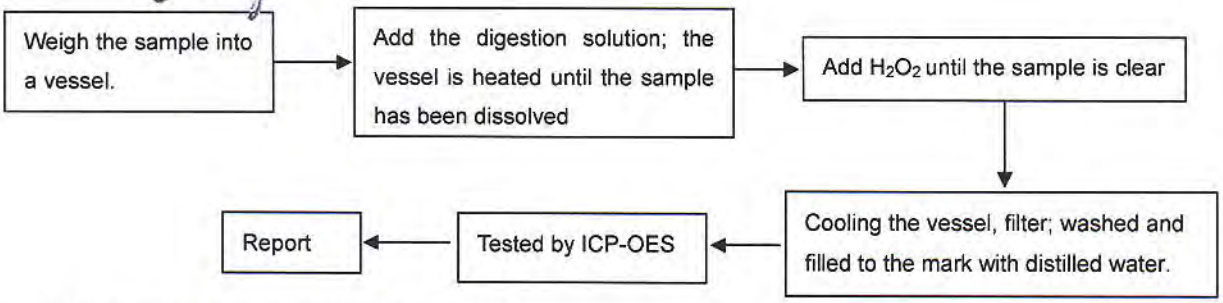
Inspected by (Technical manager) Weikin

TEST REPORT

Test Flow:

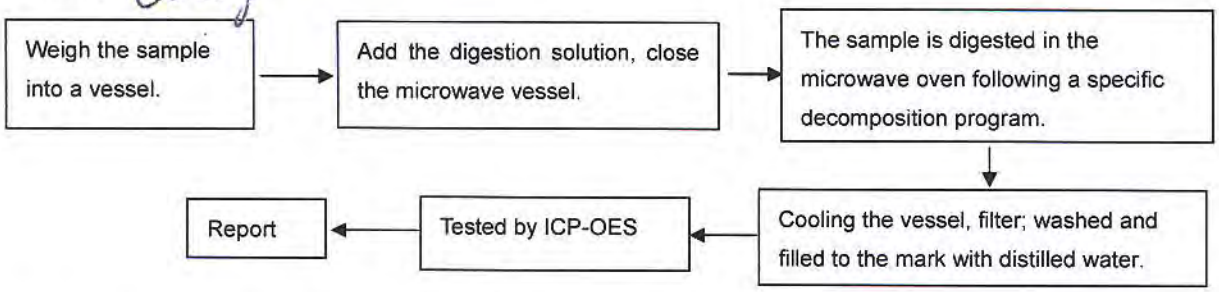
1. To Determine Lead, Cadmium Content: (Metal substrate)

Tested by: Condy



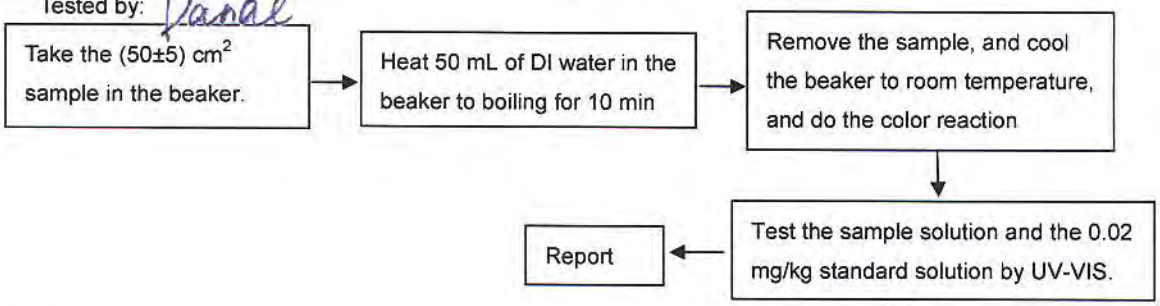
2. To Determine Mercury Content: (Metal substrate)

Tested by: Condy



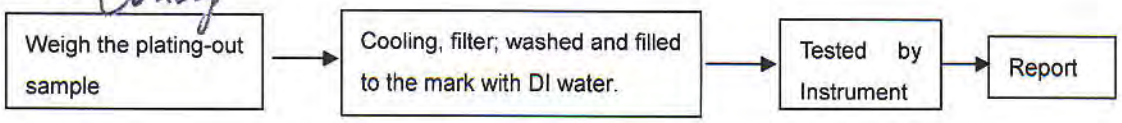
3. To Determine Hexavalent Chromium Content (boiling- water- extraction): (Metal substrate)

Tested by: Dana



4. To Determine Lead, Cadmium and Mercury Content: (Plating)

Tested by: Condy

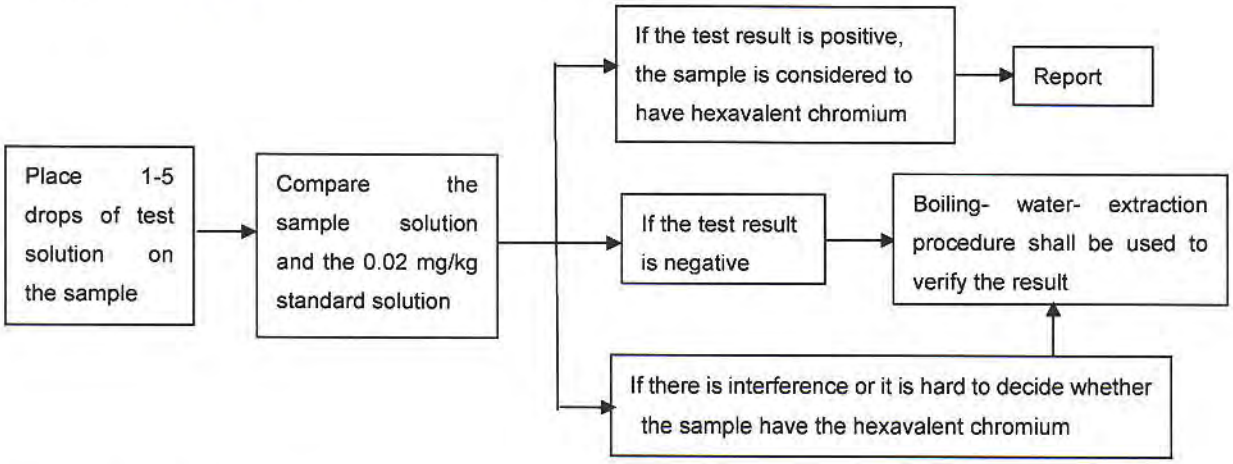


TEST REPORT

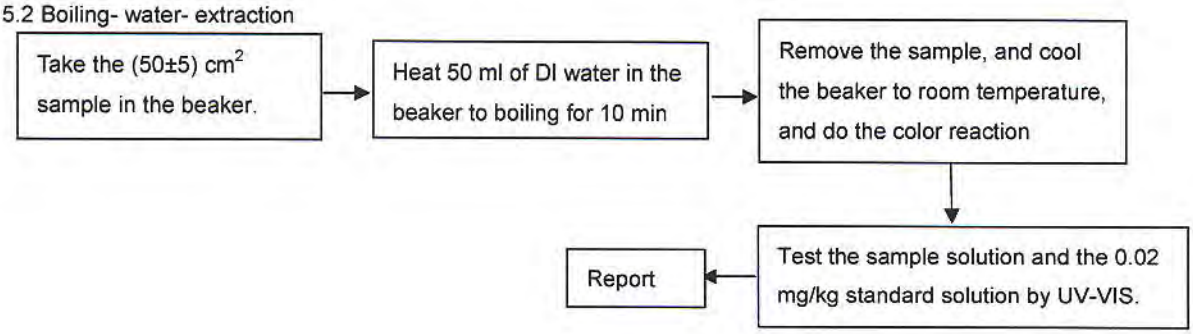
5. To Determine Hexavalent Chromium Content in colorless and colored chromate coating on metals: (Plating)

Tested by: Danal

5.1 Spot-test



5.2 Boiling- water- extraction



Sample description:

Code	Sample name	Code	Sample name
2-1	Lead wire substrate	2-3	Copper shell substrate
2-2	Lead wire Plating	2-4	Copper shell Plating

Test Results:

Item	Unit	RoHS Limit	Result			
			2-1	2-2*	2-3	2-4*
Lead (Pb)	mg/kg	1000	N.D.	2.5	40.0	N.D.
Cadmium (Cd)	mg/kg	100	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	mg/kg	1000	N.D.	N.D.	N.D.	N.D.
Chromium (CrⅥ)	mg/kg	1000	Negative	Negative	Negative	Negative

TEST REPORT

Note:

-The new RoHS directive 2011/65/EU, on Jul. 21, 2011 come into force, on Jan. 03, 2013 the formal implementation, Directive 2002/95/EC shall be repealed simultaneously.

-Specimens, which requested to determine Lead, Cadmium and Mercury Content, have been dissolved completely.

-mg/kg=ppm

-N.D.=not detected(<MQL)

-MQL=Method Quantitation Limit

-Negative=Absence of Cr (VI);

Positive=Presence of Cr (VI);

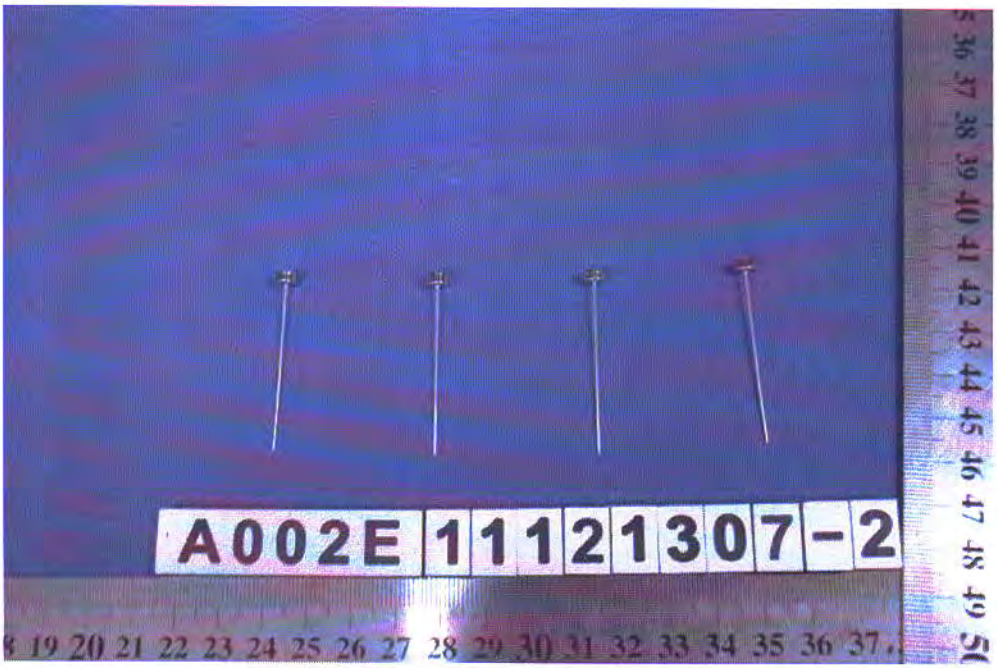
Uncertain= can not verify whether the sample have Hexavalent Chromium by spot-test.

(The tested sample should be further verified by boiling-water-extraction method if the spot test result is uncertain or negative.)

-*The test is based on the following assumption: The sample plating is a single layer and each part is uniform. The test result maybe cannot stand for the physical truth of sample plating.

-Photo is included

Photograph of Sample



Fuses copper shell

End of Report

Test Report Number : TWNC00233542

Applicant: Littelfuse Philippines Inc. Date : Nov 25, 2011
LIMA Technology Center, Lipa City,
Malvar, Batangas

Sample Description:
One (1) group of submitted samples said to be :
Part Description : Yarn
Part Number : 648106-001
Date Sample Received : Nov 21, 2011
Date Test Started : Nov 22, 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

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 : TWNC00233542

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	White Yarn
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)	591
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 : Nov 21, 2011
Test Period : Nov 22, 2011 To Nov 25, 2011

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

Number : TWNC00233542

Test Conducted

(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.

(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 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

Intertek Testing Services Taiwan Ltd.
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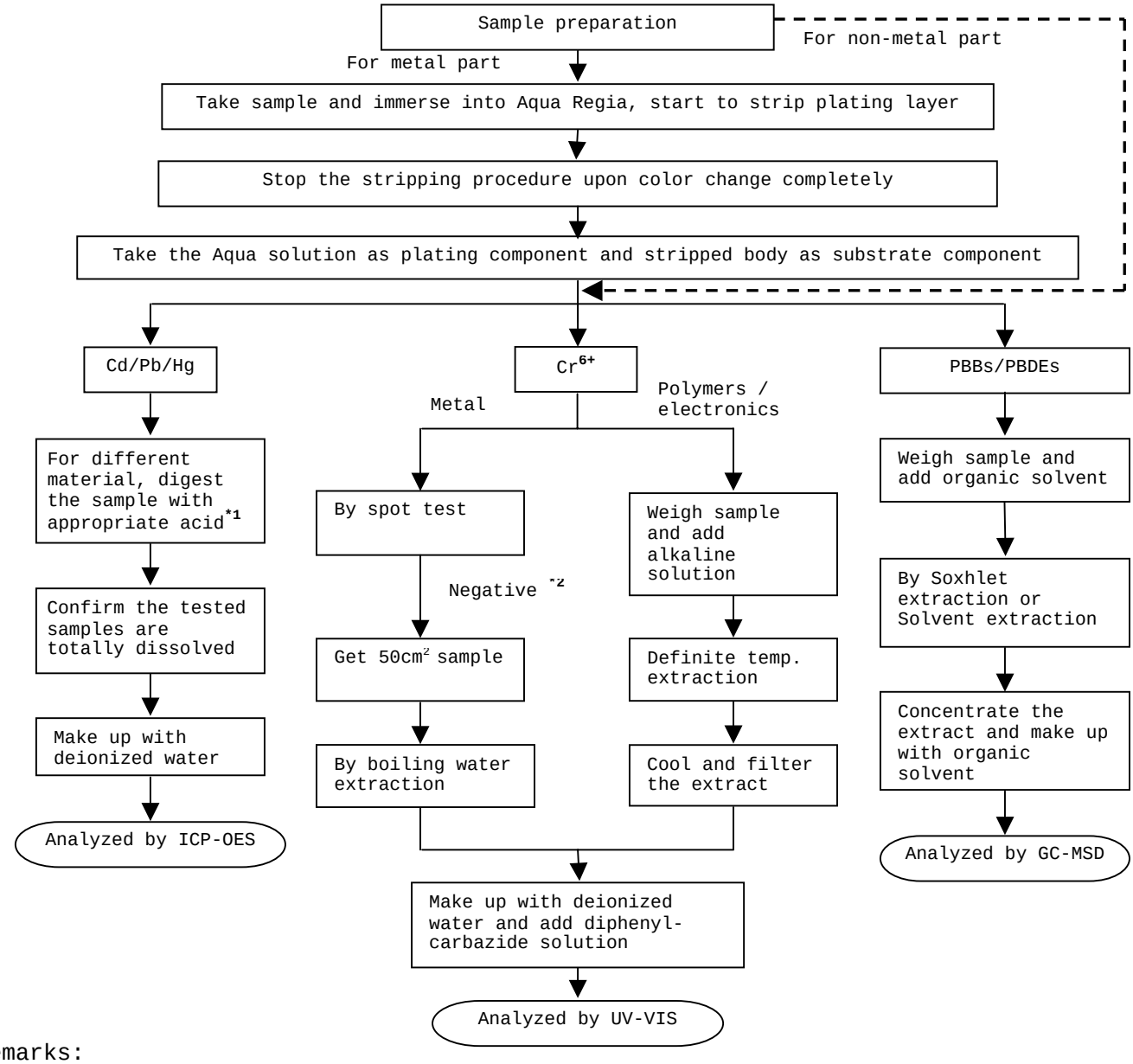
Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2400 · 6602-2401

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_2O_2, H_3BO_3
Metals	HNO_3, HCl, HF
Electronics	HNO_3, HCl, H_2O_2, HBF_4

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

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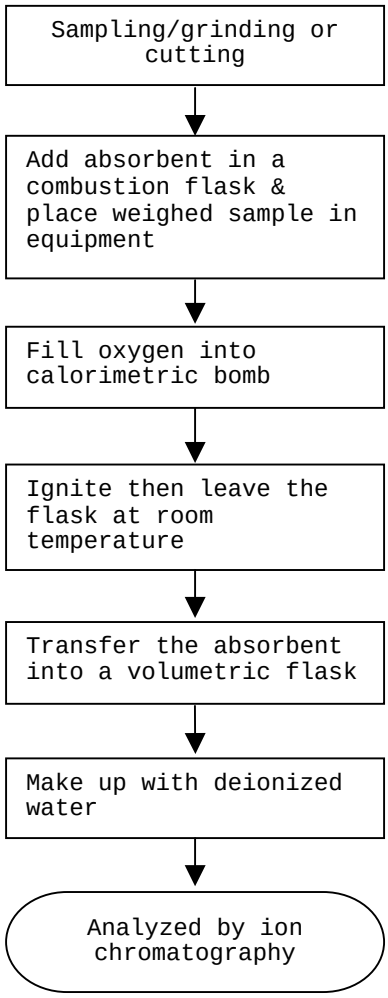
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content
Reference Standard：EN 14582



End of Report

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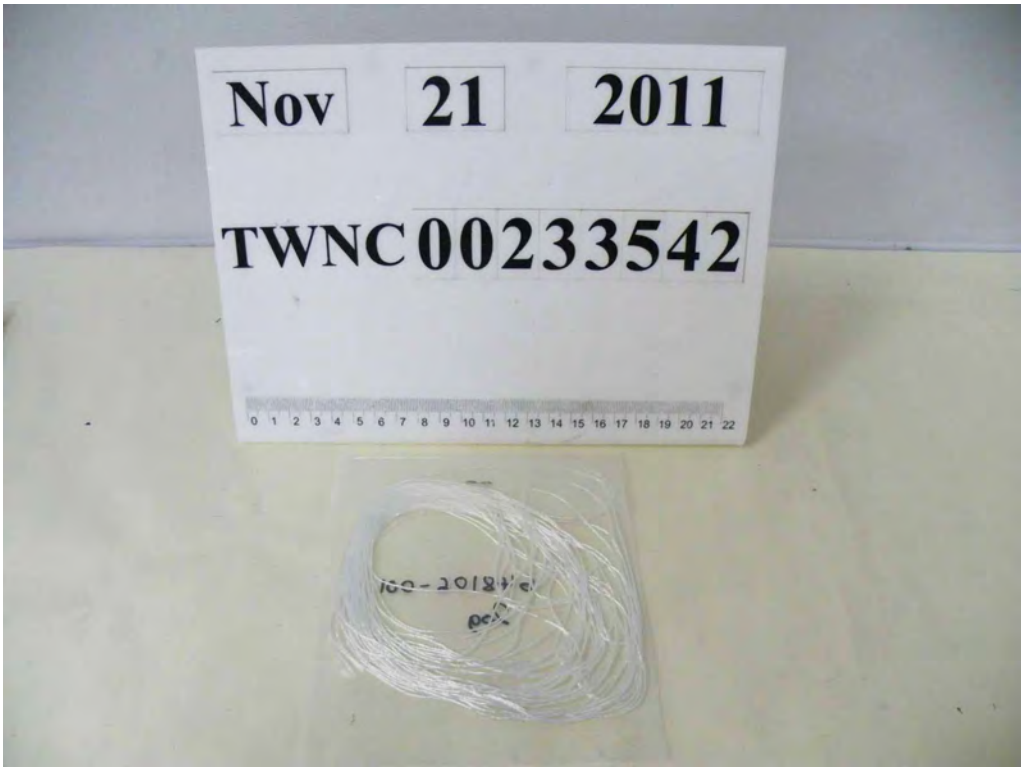
Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2400 · 6602-2401

Number : TWNC00233542

Test Conducted

Photo



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TFH Division
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Shanghai, China, 200233

Tel: +86 21 6120 6565
Fax: +86 21 6127 9740
www.intertek.com
www.intertek.com.cn
China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00299967

APPLICANT: LITTELFUSE,INC. DATE: JAN 18, 2012
800 E. NORTHWEST HWY
ATTN: A. CESISTA/ K. BACILA

SAMPLE DESCRIPTION:
One(1) Submitted Sample Said To Be **White Yarn.**
Part Description : Yarn.
Part Number : 648115.
Date Sample Received : Jan.11, 2012.
Date Test Started : Jan.11, 2012.
****

TESTS CONDUCTED:
AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)
****

TO BE CONTINUED

PREPARED AND CHECKED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

MYRA LV
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

STEPHEN TSANG
GENERAL MANAGER

Intertek Testing Services Ltd., Shanghai
TFH Division
Block B, Jinling Business Square,No.801 Yi Shan Road,
Shanghai, China, 200233

Tel: +86 21 6120 6565
Fax: +86 21 6127 9740
www.intertek.com
www.intertek.com.cn
China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00299967

TESTS CONDUCTED

1 (Ⅰ) Test Result Summary :

Testing Item	Result (ppm)
Halogen Content	
Fluorine (F)	ND
Chlorine (Cl)	ND
Bromine (Br)	ND
Iodine (I)	ND

Remarks: ppm = Parts per million = mg/kg
ND = Not detected

Responsibility Of Chemist :Ken He

(Ⅲ) Test Method:

Testing Item	Testing Method	Reporting Limit
Halogen Content	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

Remark: Reporting limit = Quantitation limit of analyte in sample

****

TO BE CONTINUED

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TFH Division
Block B, Jinling Business Square,No.801 Yi Shan Road,
Shanghai, China, 200233

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Fax: +86 21 6127 9740
www.intertek.com
www.intertek.com.cn
China Toll-Free: 800 999 1338

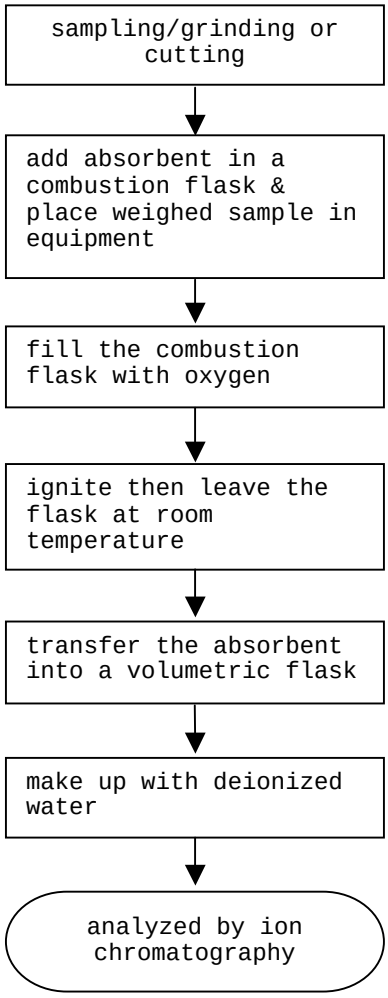
TEST REPORT NUMBER: SHAH00299967

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content

Reference Standard: EN 14582



****

TO BE CONTINUED

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Fax: +86 21 6127 9740
www.intertek.com
www.intertek.com.cn
China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00299967

TESTS CONDUCTED

2 (I) Test Result Summary :

Testing Item	Result (ppm)
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

****

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www.intertek.com
www.intertek.com.cn
China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00299967

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg
ND = Not detected

Responsibility Of Chemist :Dent Fang / Ken He

(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.

****

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China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00299967

TESTS CONDUCTED
(III) Test Method:

Testing Item	Testing 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 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

Remark: Reporting limit = Quantitation limit of analyte in sample

DATE SAMPLE RECEIVED : JAN.11, 2012
TESTING PERIOD : JAN.11, 2012 TO JAN.13, 2012

****

TO BE CONTINUED

(IV) Measurement Flowchart:

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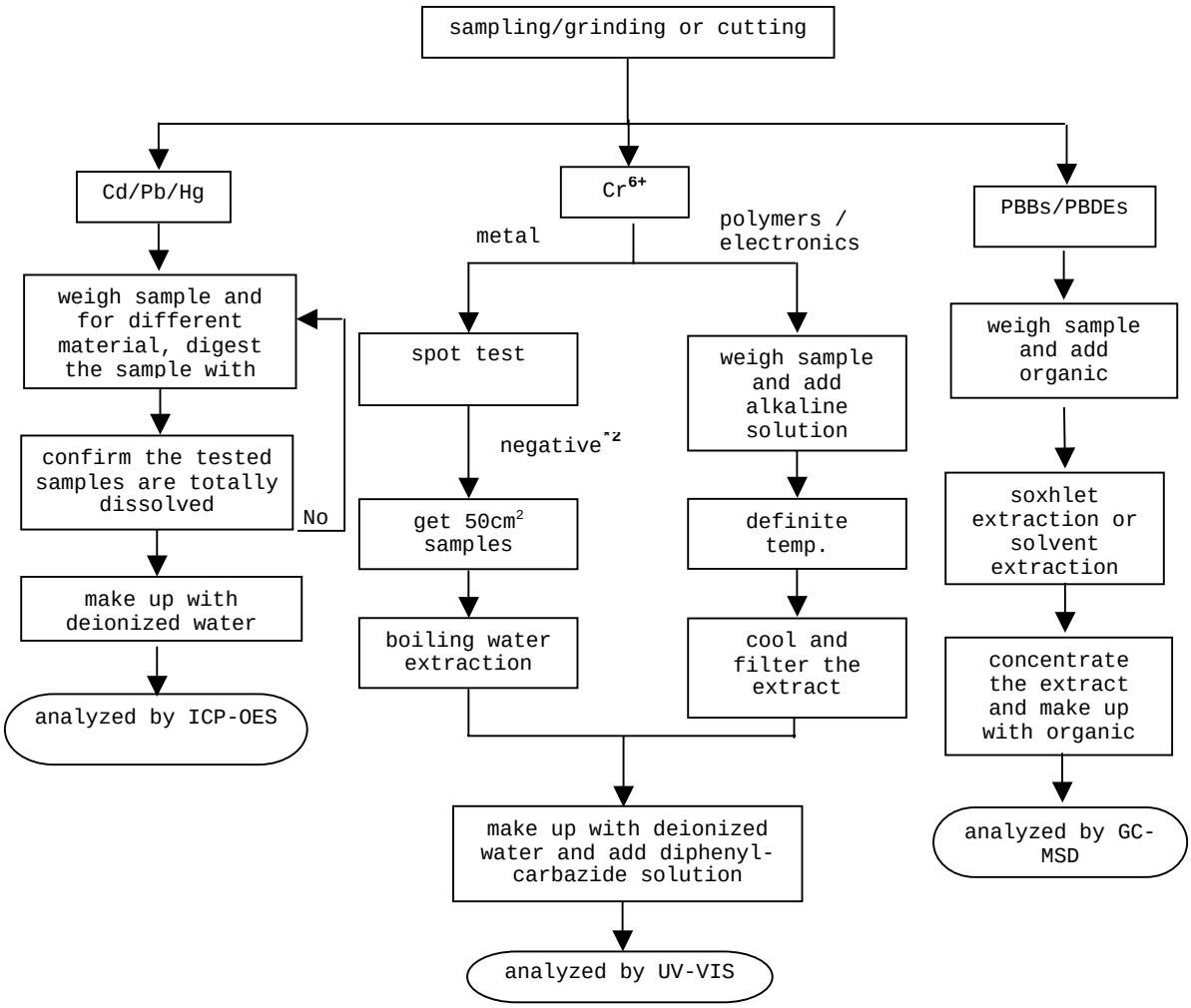
TEST REPORT NUMBER: SHAH00299967

TESTS CONDUCTED

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents
Reference Standard: IEC 62321 edition 1.0:2008



****

TO BE CONTINUED

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www.intertek.com.cn
China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00299967

TESTS CONDUCTED

REMARKS:

*1: List of appropriate acid:

Material	Acid added for digestion
Polymers	HNO_3, HCl, HF, H_2O_2, H_3BO_3
Metals	HNO_3, HCl, HF
Electronics	HNO_3, HCl, H_2O_2, HBF_4

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

****

TO BE CONTINUED

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TEST REPORT NUMBER: SHAH00299967

TESTS CONDUCTED

****

END OF REPORT

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www.intertek.com.cn
China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00296142

APPLICANT: LITTELFUSE,INC. DATE: DEC 20, 2011
800 E. NORTHWEST HWY
ATTN: A. CESISTA/ K. BACILA

SAMPLE DESCRIPTION:
One(1) submitted sample said to be **White powder.**
Part Description : Snow white filler.
Part Number : 090187.
Date Sample Received : Dec.14, 2011.
Date Test Started : Dec.14, 2011.
****

TESTS CONDUCTED:
AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)
****

TO BE CONTINUED

PREPARED AND CHECKED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

MYRA LV
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

STEPHEN TSANG
GENERAL MANAGER

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www.intertek.com.cn
China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00296142

TESTS CONDUCTED

1 (I) Test Result Summary :

Testing Item	Result (ppm)
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 :Ken He

(II) Test Method:

Testing Item	Testing Method	Reporting Limit
Halogen Content	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

Remark: Reporting limit = Quantitation limit of analyte in sample

****

TO BE CONTINUED

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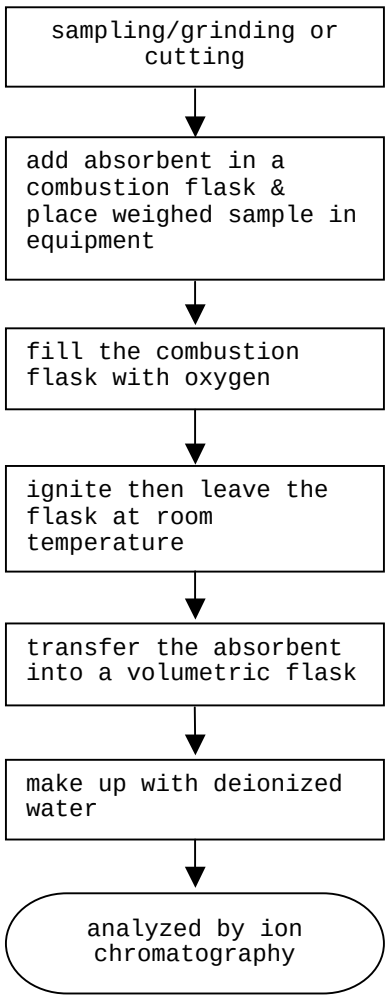
TEST REPORT NUMBER: SHAH00296142

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content
Reference Standard: EN 14582



****

TO BE CONTINUED

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TEST REPORT NUMBER: SHAH00296142

TESTS CONDUCTED

2 (I) Test Result Summary :

Testing Item	Result (ppm)
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

****

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China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00296142

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg
ND = Not detected

Responsibility Of Chemist :Dent Fang / Ken He

(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.

****

TO BE CONTINUED

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TEST REPORT NUMBER: SHAH00296142

TESTS CONDUCTED
(III) Test Method:

Testing Item	Testing 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 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

Remark: Reporting limit = Quantitation limit of analyte in sample

DATE SAMPLE RECEIVED : DEC.14, 2011
TESTING PERIOD : DEC.14, 2011 TO DEC.19, 2011

****

TO BE CONTINUED

Intertek Testing Services Ltd., Shanghai
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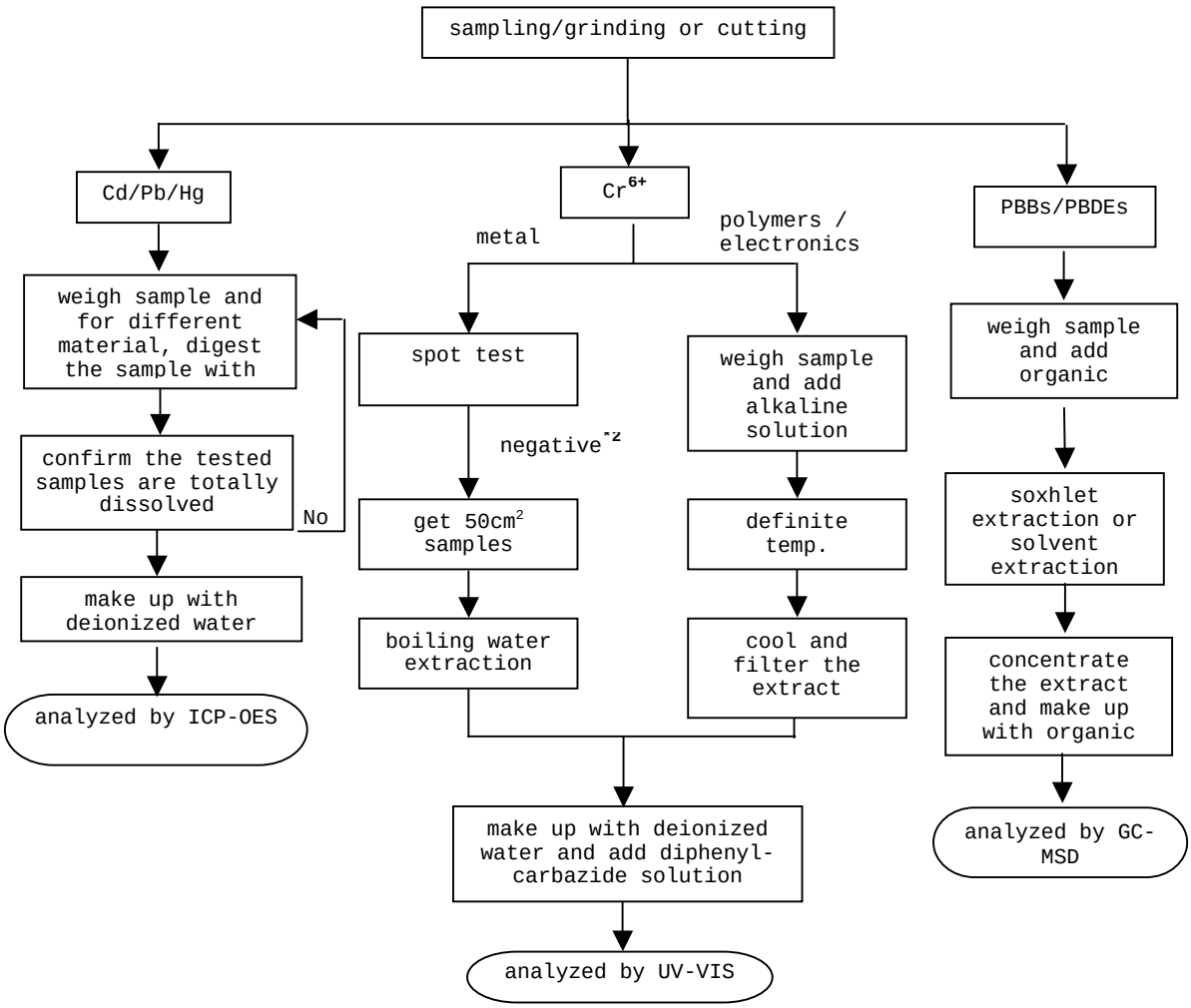
TEST REPORT NUMBER: SHAH00296142

TESTS CONDUCTED
(IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents
Reference Standard: IEC 62321 edition 1.0:2008



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TO BE CONTINUED

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www.intertek.com
www.intertek.com.cn
China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00296142

TESTS CONDUCTED

REMARKS:

*1: List of appropriate acid:

Material	Acid added for digestion
Polymers	HNO_3, HCl, HF, H_2O_2, H_3BO_3
Metals	HNO_3, HCl, HF
Electronics	HNO_3, HCl, H_2O_2, HBF_4

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

****

TO BE CONTINUED

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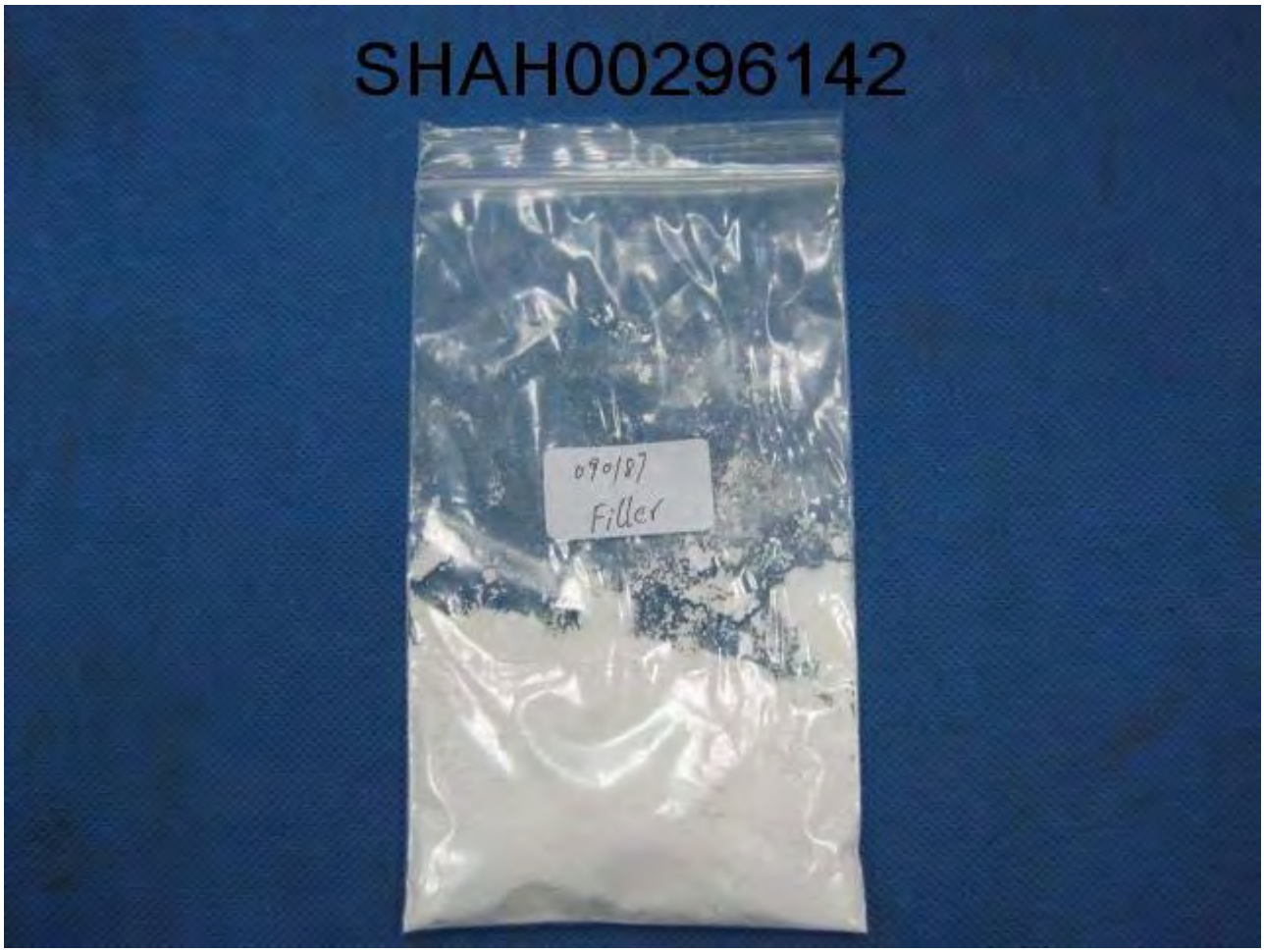
China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00296142

TESTS CONDUCTED



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END OF REPORT

Test Report

No. CANEC1207912201 Date: 26 Jun 2012

XIAMEN LICHUN ELECTRONIC ELEMENT CO.,LTD

42—2XINGLIN WEST RD.,361022,JIMEI DISTRICT,XIAMEN,,FUJIAN,P.R.C

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

SGS Job No. :	XM13901119EC - XM
Date of Sample Received :	18 Jun 2012
Testing Period :	18 Jun 2012 - 26 Jun 2012
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Ltd.

Lucy Wu
Approved Signatory

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
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
1	CAN12-079122.001	Transparent glass tube

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive 2011/65/EU

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	229
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

Test Item(s)	Limit	Unit	MDL	*001*
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 directive 2011/65/EU, Annex II

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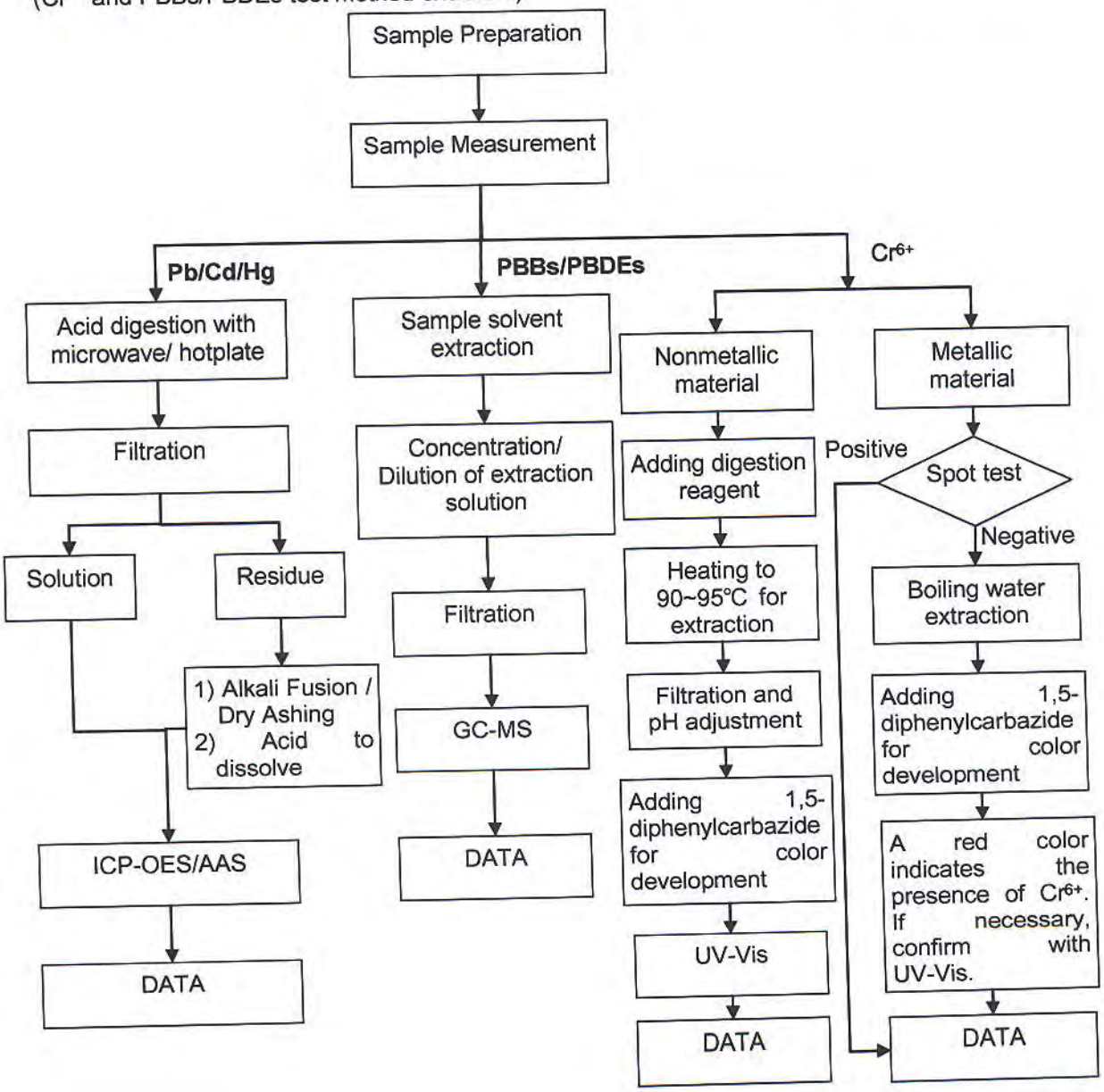
ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Bella Wang / Cutey Yu
2) Name of the person in charge of testing: Adams Yu / Ryan Yang
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:

SGS authenticate the photo on original report only

*** End of Report ***

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www.intertek.com.cn
China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00299985

APPLICANT: LITTELFUSE,INC. DATE: JAN 18, 2012
800 E. NORTHWEST HWY
ATTN: A. CESISTA/ K. BACILA

SAMPLE DESCRIPTION:
One (1) Submitted Sample Said To Be **Red Powder.**
Part Description : Fluorescein.
Part Number : 425209.
Date Sample Received : Jan.11, 2012.
Date Test Started : Jan.11, 2012.
****

TESTS CONDUCTED:
AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)
****

TO BE CONTINUED

PREPARED AND CHECKED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

MYRA LV
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

STEPHEN TSANG
GENERAL MANAGER

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TEST REPORT NUMBER: SHAH00299985

TESTS CONDUCTED

1 PHTHALATE CONTENT TEST

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

TESTED COMPOUND	RESULT (%,W/W)	LIMIT(%,W/W) (MAX.)
DIBUTYL PHTHALATE (DBP)	ND	---
DI(2-ETHYL HEXYL) PHTHALATE(DEHP)	ND	---
BENZYL BUTYL PHTHALATE (BBP)	ND	---
SUM OF THREE PHTHALATES	ND	0.1

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII ITEMS 51 & 52 OF THE REACH REGULATION (EC) NO. 1907/2006 & AMENDENT NO.552/2009 (FORMERLY KNOWN AS DIRECTIVE 2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN CARE ARTICLES.

DETECTION LIMIT = 0.01%(W/W)
ND = NOT DETECTED

****

TO BE CONTINUED

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www.intertek.com.cn
China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SHAH00299985

TESTS CONDUCTED

2 (Ⅰ) Test Result Summary :

Testing Item	Result (ppm)
Halogen Content	
Fluorine (F)	ND
Chlorine (Cl)	180
Bromine (Br)	ND
Iodine (I)	ND

Remarks: ppm = Parts per million = mg/kg
ND = Not detected

Responsibility Of Chemist :Ken He

(Ⅲ) Test Method:

Testing Item	Testing Method	Reporting Limit
Halogen Content	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

Remark: Reporting limit = Quantitation limit of analyte in sample

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TO BE CONTINUED

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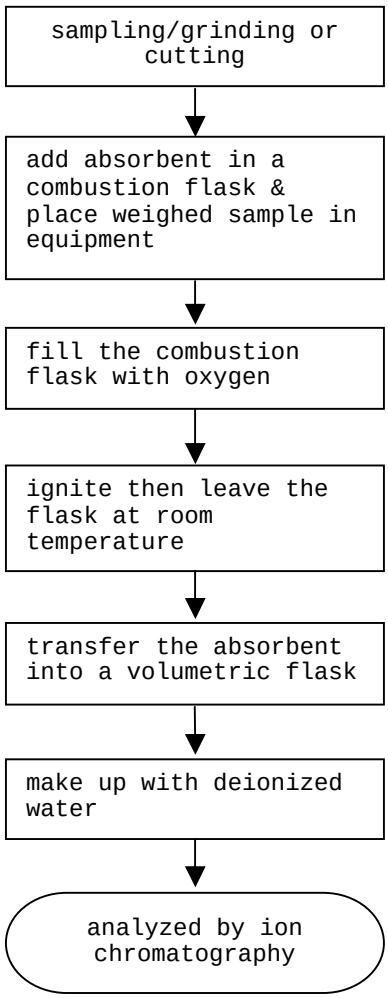
TEST REPORT NUMBER: SHAH00299985

TESTS CONDUCTED

(Ⅳ) Measurement Flowchart:

Test For Halogen Content

Reference Standard: EN 14582



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TESTS CONDUCTED

3 (I) Test Result Summary :

Testing Item	Result (ppm)
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

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TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg
ND = Not detected

Responsibility Of Chemist :Dent Fang / Ken He

(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.

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TESTS CONDUCTED
(III) Test Method:

Testing Item	Testing 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 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

Remark: Reporting limit = Quantitation limit of analyte in sample
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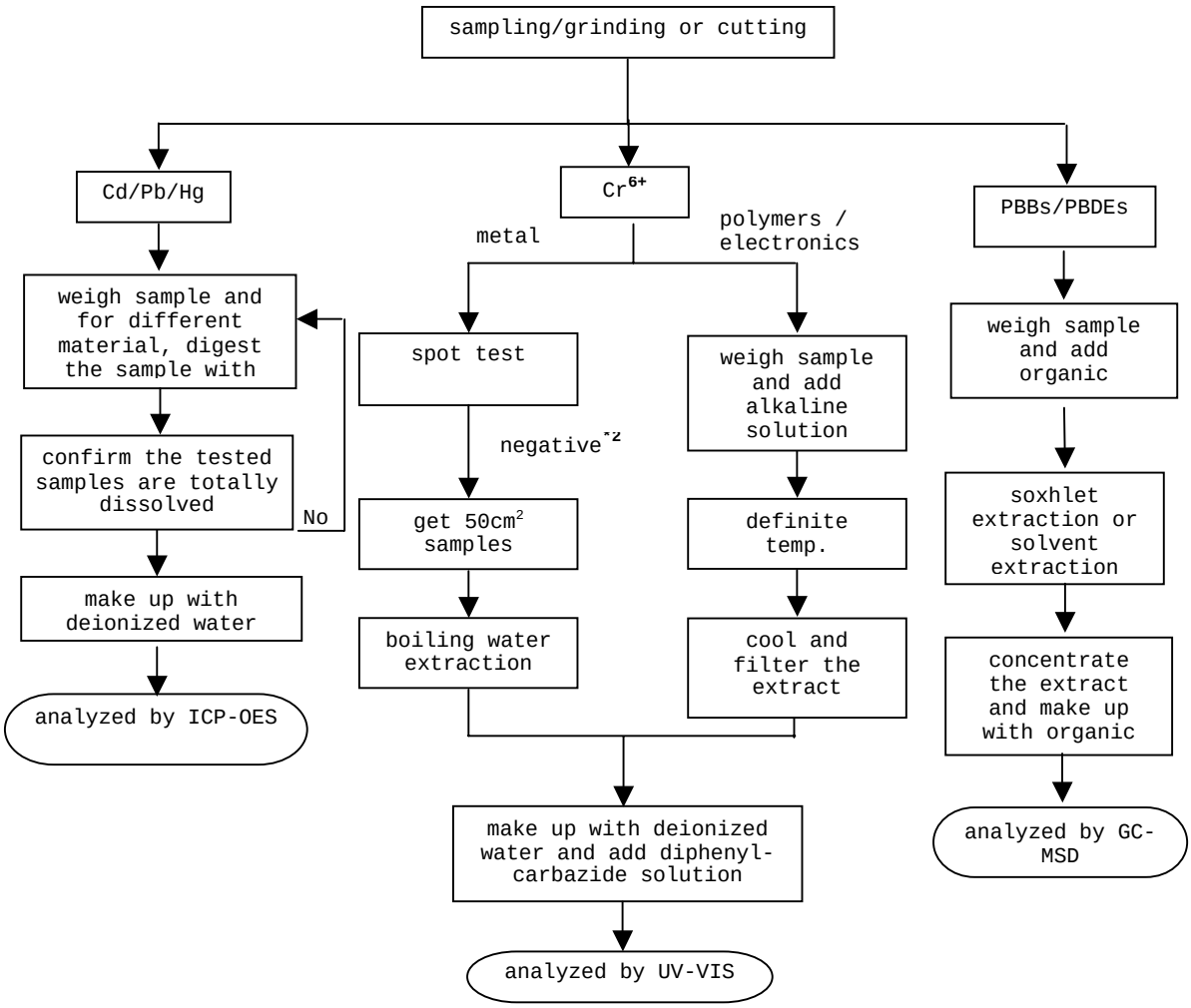
TESTS CONDUCTED
(Ⅳ) MEASUREMENT FLOWCHART:
Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents
Reference Standard: IEC 62321 edition 1.0:2008



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TESTS CONDUCTED

REMARKS:

*1: List of appropriate acid:

Material	Acid added for digestion
Polymers	HNO_3, HCl, HF, H_2O_2, H_3BO_3
Metals	HNO_3, HCl, HF
Electronics	HNO_3, HCl, H_2O_2, HBF_4

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

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TESTS CONDUCTED

3 PHTHALATE CONTENT TEST

WITH REFERENCE TO ASTM D3421, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

	RESULT (%, W/W)	LIMIT (%, W/W) (MAX.)
DIBUTYL PHTHALATE (DBP)	ND	0.1
DI(2-ETHYL HEXYL) PHTHALATE (DEHP)	ND	0.1
BENZYL BUTYL PHTHALATE (BBP)	ND	0.1

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER PRODUCT SAFETY IMPROVEMENT ACT 2008 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01% (W/W)
ND = NOT DETECTED

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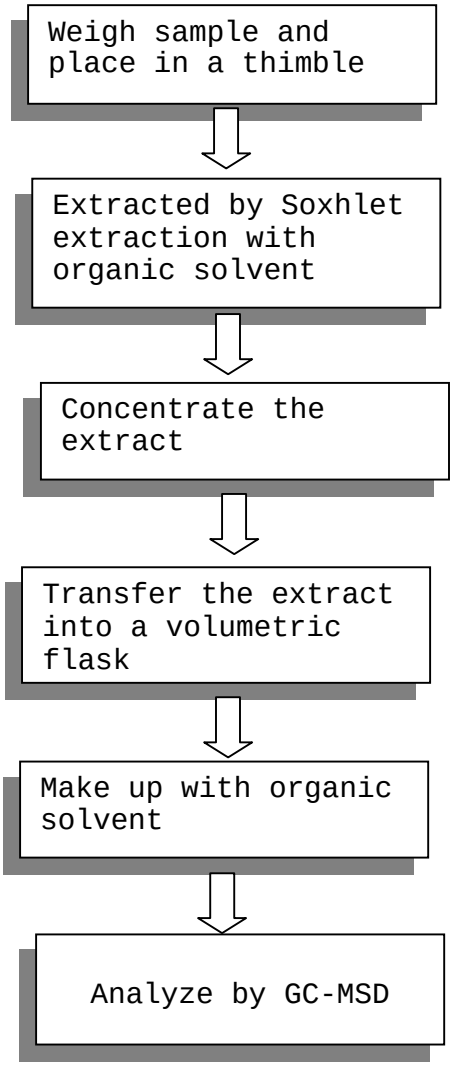
TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



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TESTS CONDUCTED

(A) TEST RESULT SUMMARY:

TESTING ITEM	RESULT(PPM)
HBCD (HEXABROMOCYCLODODECANE)	ND

REMARKS:
ppm = PARTS PER MILLION = mg/kg
ND = NOT DETECTED

(B) TEST METHOD :

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
HBCD (HEXABROMOCYCLODODECANE)	WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS	10 ppm

DATE SAMPLE RECEIVED : JAN.11, 2012
TESTING PERIOD : JAN.11, 2012 TO JAN .16, 2012

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END OF REPORT