

測試報告 Test Report

號碼(No.): KA/2011/31598

日期(Date): 2011/03/30

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界霖科技股份有限公司

JIH LIN TECHNOLOGY CO., LTD.

高雄市楠梓加工出口區中央路43號

NO. 43, JHONG YANG RD., N.E.P.Z. KAOHSIUNG, TAIWAN.



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

樣品名稱(Sample Description) : COPPER/SILVER LEAD FRAME
樣品型號(Style/Item No.) : Cu(PMC90/C1920)+Ag
收件日期(Sample Receiving Date) : 2011/03/24
測試期間(Testing Period) : 2011/03/24 TO 2011/03/30

=====
測試需求(Test Requested) : 參照 RoHS 2002/95/EC 及其修定指令要求. (In accordance with the RoHS Directive 2002/95/EC, and its amendment directives).

測試方法(Test Method) : 參考IEC 62321: 2008方法檢測. (With reference to IEC 62321: 2008. Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products).
(1) 參考IEC 62321: 2008方法, 用感應耦合電漿原子發射光譜儀檢測鎘含量. / With reference to IEC 62321: 2008. Determination of Cadmium by ICP-
(2) 參考IEC 62321: 2008方法, 用感應耦合電漿原子發射光譜儀檢測鉛含量. / With reference to IEC 62321: 2008. Determination of Lead by ICP-AES.
(3) 參考IEC 62321: 2008方法, 用感應耦合電漿原子發射光譜儀檢測汞含量. / With reference to IEC 62321: 2008. Determination of Mercury by ICP-
(4) 用Spot test / boiling water extraction方法檢測六價鉻含量. / Determination of Hexavalent Chromium by Spot test / boiling water extraction Method.
(5) 用感應耦合電漿原子發射光譜儀檢測鎘含量. / Determination of Cadmium by ICP-AES.

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


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



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測試結果(Test Results) 單位(Unit): mg/kg

測試項目 (Test Items)	測試方法 Method	結果 (Result)		方法偵測 極限值
		No.1	No.2	
鎘 / Cadmium (Cd)	(1)	n.d.	n.d.	2
鉛 / Lead (Pb)	(2)	n.d.	6.32	2
汞 / Mercury (Hg)	(3)	n.d.	n.d.	2
六價鉻 / Hexavalent Chromium Cr(VI) by	(4)	Negative	Negative	See Note 4
多溴聯苯總和 / Sum of PBBs	(8)	---	n.d.	-
一溴聯苯 / Monobromobiphenyl	(9)	---	n.d.	5
二溴聯苯 / Dibromobiphenyl	(10)	---	n.d.	5
三溴聯苯 / Tribromobiphenyl	(11)	---	n.d.	5
四溴聯苯 / Tetrabromobiphenyl	(10)	---	n.d.	5
五溴聯苯 / Pentabromobiphenyl	(10)	---	n.d.	5
六溴聯苯 / Hexabromobiphenyl	(10)	---	n.d.	5
七溴聯苯 / Heptabromobiphenyl	(10)	---	n.d.	5
八溴聯苯 / Octabromobiphenyl	(10)	---	n.d.	5
九溴聯苯 / Nonabromobiphenyl	(11)	---	n.d.	5
十溴聯苯 / Decabromobiphenyl	(10)	---	n.d.	5
多溴聯苯醚總和 / Sum of PBDEs	(10)	---	n.d.	-
一溴聯苯醚 / Monobromodiphenyl ether	(10)	---	n.d.	5
二溴聯苯醚 / Dibromodiphenyl ether	(10)	---	n.d.	5
三溴聯苯醚 / Tribromodiphenyl ether	(10)	---	n.d.	5
四溴聯苯醚 / Tetrabromodiphenyl ether	(10)	---	n.d.	5
五溴聯苯醚 / Pentabromodiphenyl ether	(10)	---	n.d.	5
六溴聯苯醚 / Hexabromodiphenyl ether	(10)	---	n.d.	5
七溴聯苯醚 / Heptabromodiphenyl ether	(10)	---	n.d.	5
八溴聯苯醚 / Octabromodiphenyl ether	(10)	---	n.d.	5
九溴聯苯醚 / Nonabromodiphenyl ether	(10)	---	n.d.	5
十溴聯苯醚 / Decabromodiphenyl ether	(11)	---	n.d.	5

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測試部位描述 (TEST PART DESCRIPTION):

- NO.1 : 銀色鍍層 (SILVER PLATING LAYER OF COPPER/SILVER LEAD FRAME)
NO.2 : 銅色底材 (BASE MATERIAL OF COPPER/SILVER LEAD FRAME)

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. Spot-test:
Negative = Absence of Cr(VI) coating / surface layer(鍍層中偵測不到六價鉻),
Positive = Presence of Cr(VI) coating / surface layer(鍍層中偵測到六價鉻);
The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed.
(當該測項無法確認時, 測試樣品可藉由boiling-water-extraction測試方法進一步確認)

Boiling-water-extraction:

- Negative = Absence of Cr(VI) coating / surface layer(鍍層中偵測不到六價鉻),
Positive = Presence of Cr(VI) coating / surface layer(鍍層中偵測到六價鉻);
the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² sample surface area.
該溶液濃度 \geq 0.02 mg/kg with 50 cm² (sample surface area)
5. # = Positive indicates the presence of Cr(VI) on the tested areas and result be regarded as not comply with RoHS requirement. (Positive表示測試區域之六價鉻不符合RoHS要求)
Negative indicates the absence of Cr(VI) on the tested areas and result be regarded as comply with RoHS requirement. (Negative表示測試區域之六價鉻符合RoHS要求)
 7. "-" = Not Regulated (無規格值)
 8. "---" = Not Conducted (未測項目)

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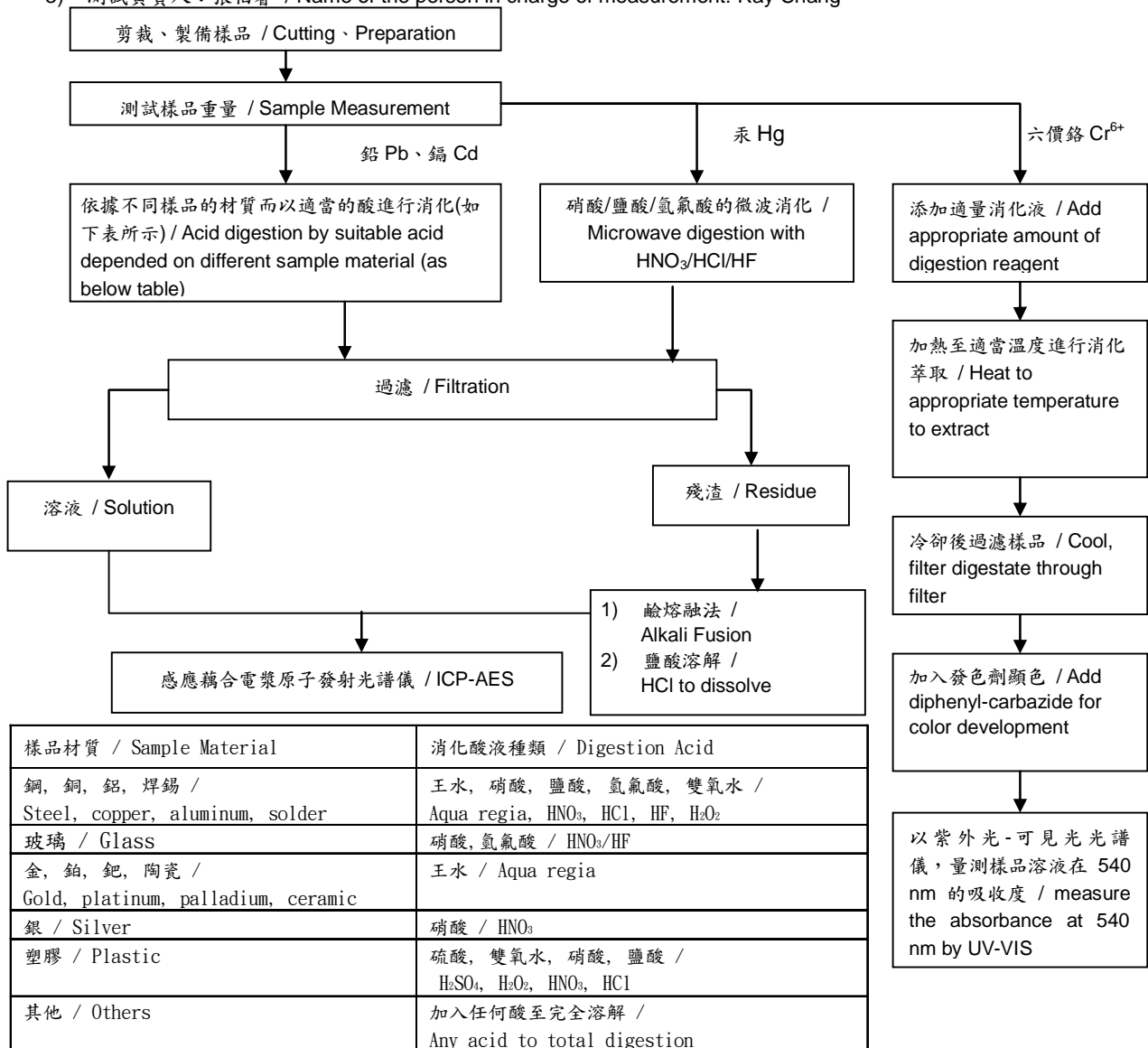
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) 測試人員：張俊雄 / Name of the person who made measurement: Alex Chang
- 3) 測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang



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

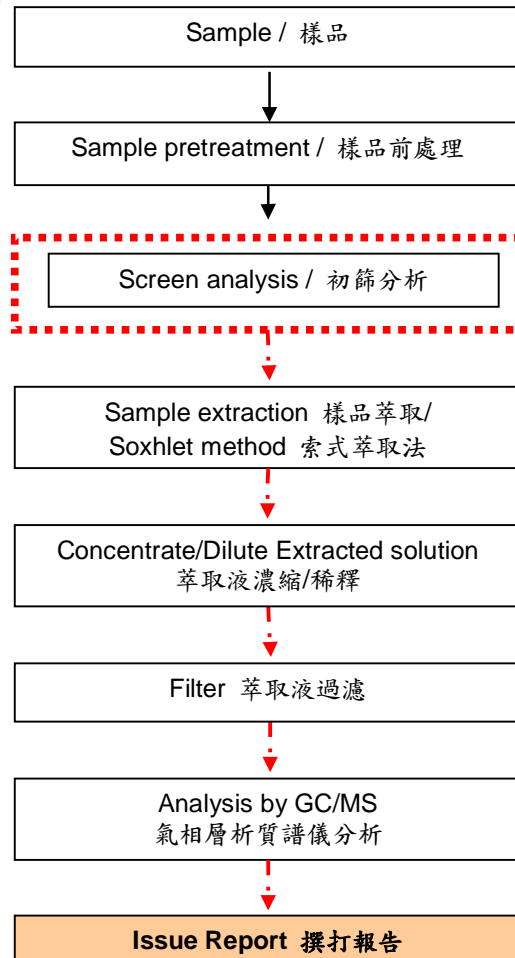
1) 測試人員: 曹嘉琪 / Name of the person who made measurement: Anson Tsao

2) 測試負責人: 張伯睿 / Name of the person in charge of measurement: Ray 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 - - - ->



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** 報告結尾(End of Report) **

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