

測試報告 Test Report

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沅興科技股份有限公司

YUAN CIRCUIT TECHNOLOGY CO., LTD.

桃園縣楊梅市幼獅工業區幼四路4號

NO. 4 YOUTH 4TH ROAD, YOUTH INDUSTRIAL PARK TAOYUAN, TAIWAN R. O. C.



以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as) :

送樣廠商(Sample Submitted By) : 沅興科技股份有限公司 (YUAN CIRCUIT TECHNOLOGY CO., LTD.)
樣品名稱(Sample Description) : P.C.B (P.C.B 印刷電路板)
樣品型號(Style/Item No.) : 化金板 (IMMERSION GOLD)
收件日期(Sample Receiving Date) : 2013/07/19
測試期間(Testing Period) : 2013/07/19 TO 2013/07/25

=====
測試需求(Test Requested) : (1) 依據客戶要求, 參考RoHS 2011/65/EU Annex II 指令進行鎘, 鉛, 汞, 六價鉻, 多
溴聯苯, 多溴聯苯醚測試. (As specified by client, with reference to RoHS
Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI),
PBBs, PBDEs contents in the submitted sample.)
(2) 依據客戶指定, 進行全氟辛酸, 全氟辛烷磺酸測試. (As specified by client, to
test PFOA, PFOS contents in the submitted sample.)

測試方法(Test Method) : 請見下一頁 (Please refer to next pages).

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


Edison Chang / Sr. Supervisor
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory – Taipei

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測試結果(Test Results)

測試部位(PART NAME) No.1 : 綠色印刷電路板 (GREEN PCB)

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	n.d.
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)	mg/kg	參考IEC 62321: 2008方法, 以UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	參考US EPA 3550C: 2007方法, 以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
全氟辛酸 / PFOA (CAS No.: 335-67-1)	mg/kg	參考US EPA 3550C: 2007方法, 以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.

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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/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.		

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)

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PFOS參考資訊(Reference Information) : 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm)，在半成品、成品或零部件中不得超過0.1%(1000ppm)，在紡織品或塗層材料中不得超過 $1\mu\text{g}/\text{m}^2$ 。(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above $1\mu\text{g}/\text{m}^2$.)

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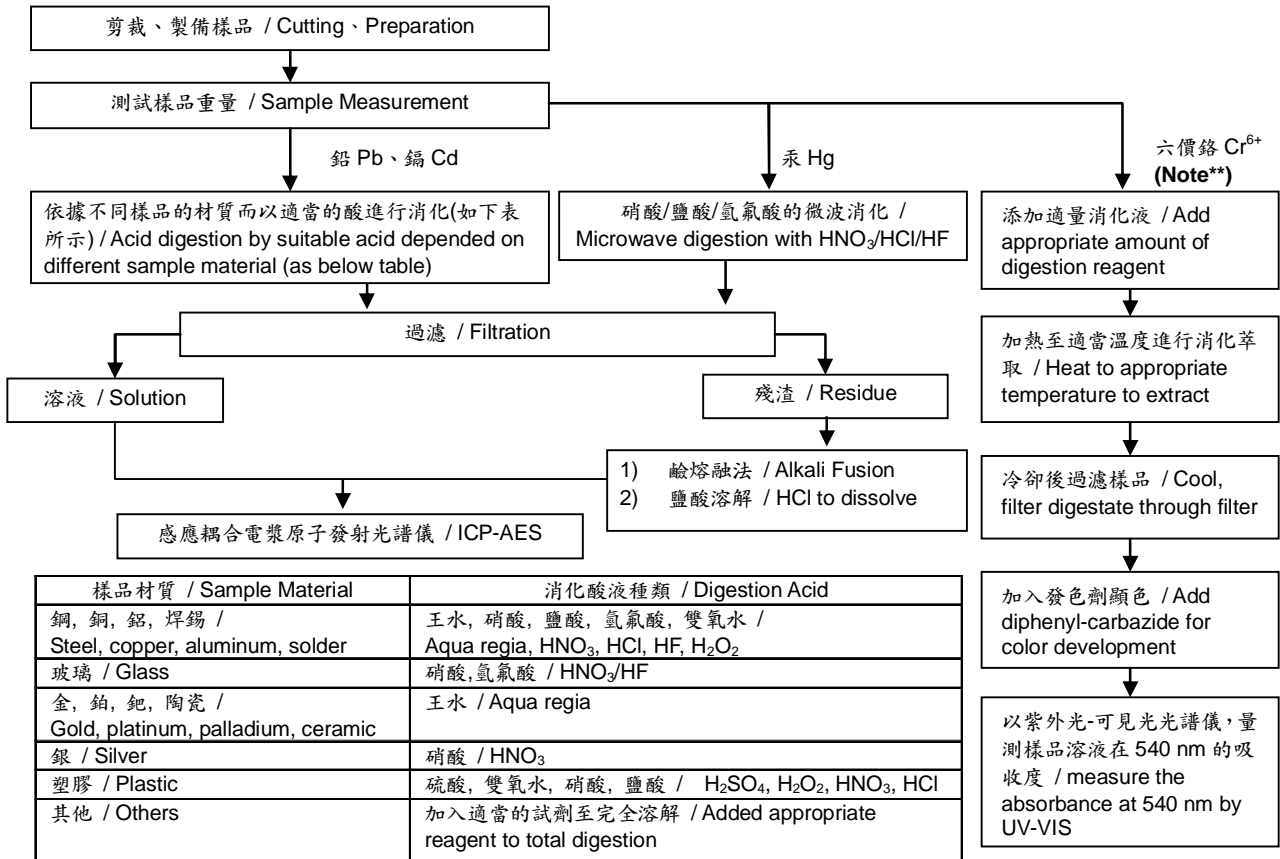
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張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



Note :** (1) 針對非金屬材料加入鹼性消化液，加熱至 90-95°C 萃取 / For non-metallic material, add alkaline digestion reagent and heat to 90-95°C.
 (2) 針對金屬材料加入純水，加熱至沸騰萃取 / For metallic material, add pure water and heat to boiling.

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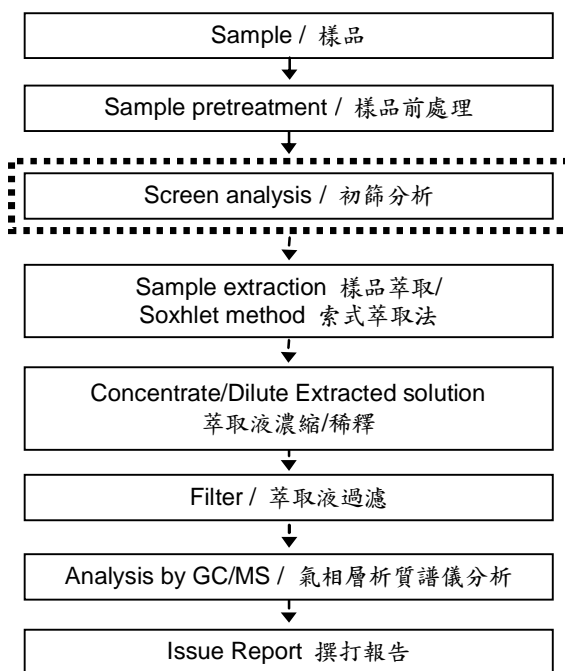
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多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 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 - - - →



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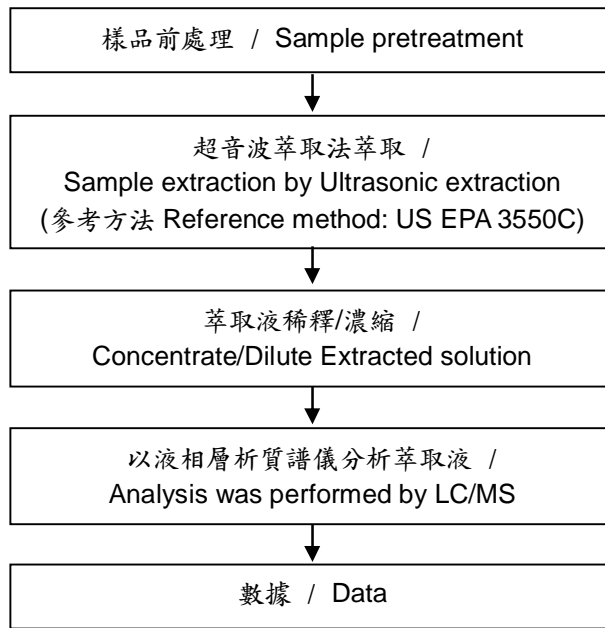
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全氟辛酸/全氟辛烷磺酸分析流程圖 / PFOA/PFOS analytical flow chart

- 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



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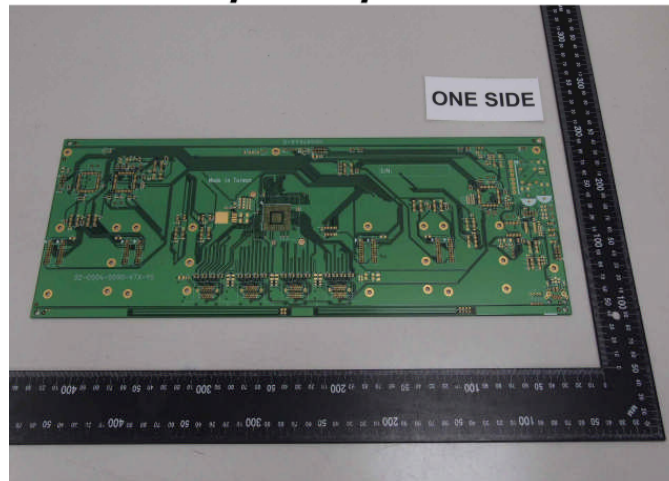
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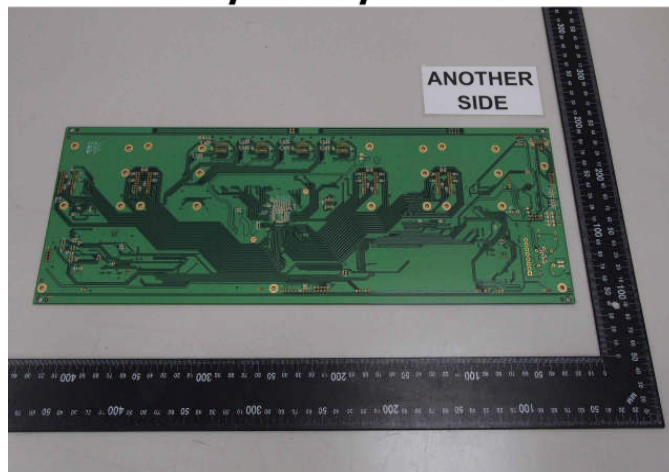


*** 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。***
(The tested sample / part is marked by an arrow if it's shown on the photo.)

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**** 報告結尾(End of Report) ****

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