

測試報告 Test Report

號碼(No.) : CE/2008/80629F 日期(Date) : 2008/08/15 頁數(Page) : 1 of 10

台耀科技股份有限公司
TAIWAN UNION TECHNOLOGY CORPORATION
(TAIWAN UNION TECHNOLOGY CORPORATION(CHANGSHU))
新竹縣竹北市博愛街803號
803, PO AI ST., CHUPEI CITY HSINCHU HSIEN 302, TAIWAN
(88 DONGNAN RD., CHANGSHU, JIANGSU, CHINA)



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 CLAD LAMINATE
樣品型號(Style/Item No.) : TU-752
收件日期(Sample Receiving Date) : 2008/07/31 AND 2008/08/04
測試期間(Testing Period) : 2008/07/31 TO 2008/08/11 AND 2008/08/04 TO 2008/08/11

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

結論(Conclusion) : 根據客戶所提供的樣品，其鎘、鉛、汞、六價鉻、多溴聯苯及多溴聯苯醚的測試結果符合RoHS(2002/95/EC)及其修定指令之要求 (Based on the performed tests on submitted samples, the test results of Cadmium, Lead, Mercury, Hexavalent Chromium Cr(VI), PBBs and PBDEs are **compliant with** the limits of RoHS Directive 2002/95/EC and its subsequent amendments).

* 此份報告為合併 CE/2008/78951 及 CE/2008/80629 之報告 *

* This report is combined with reports of CE/2008/78951 and CE/2008/80629 *

Chenyu Kung / Operation Manager
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

: 黃色片狀 (YELLOW SHEET (CE/2008/78951))

測試部位(PART NAME) NO.2

: 銅色箔片 (COPPER COLORED FOIL (CE/2008/80629))

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)		法規 限值 (Limit)
				NO.1	NO.2	
鎘 / Cadmium (Cd)	mg/kg	參考US EPA 3052方法, 用感應耦合電漿原子發射光譜儀檢測鎘含量. / With reference to US EPA Method 3052 for Cadmium Content. Analysis was performed by ICP-AES.	2	n.d.	---	100
	mg/kg	參考BS EN 1122方法B:2001, 用感應耦合電漿原子發射光譜儀檢測鎘含量. / With reference to BS EN 1122:2001, Method B for Cadmium Content. Analysis was performed by ICP-AES.	2	---	n.d.	100
鉛 / Lead (Pb)	mg/kg	參考US EPA 3052方法, 用感應耦合電漿原子發射光譜儀檢測鉛含量. / With reference to US EPA Method 3052 for Lead Content. Analysis was performed by ICP-AES.	2	n.d.	---	1000
	mg/kg	參考US EPA 3050B方法, 用感應耦合電漿原子發射光譜儀檢測鉛含量. / With reference to US EPA Method 3050B for Lead Content. Analysis was performed by ICP-AES.	2	---	n.d.	1000
汞 / Mercury (Hg)	mg/kg	參考US EPA 3052方法, 用感應耦合電漿原子發射光譜儀檢測汞含量. / With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES.	2	n.d.	---	1000

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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)		法規 限值 (Limit)
				NO.1	NO.2	
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考US EPA 3060A方法, 用UV-VIS (US EPA 7196A) 檢測六價鉻含量. / With reference to US EPA Method 3060A & 7196A for Hexavalent Chromium. Analysis was performed by UV-Vis Spectrometry.	2	---	n.d.	1000
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	針對非金屬材質之樣品, 參考US EPA 3060A方法, 用UV-VIS (US EPA 7196A) 檢測六價鉻含量. / With reference to US EPA Method 3060A & 7196A for Hexavalent Chromium for non-metallic samples. Analysis was performed by UV-Vis Spectrometry.	2	n.d.	---	1000
全氟辛磺酸 / Perfluorooctane sulfonates (PFOS) PFOS — Acid PFOS — Metal Salt PFOS — Amide	mg/kg	參考US EPA 3540C : 1996方法, 以液相層析質譜儀檢測全氟辛磺酸含量. / With reference to US EPA 3540C : 1996 method for PFOS Content. Analysis was performed by LC/MS.	10	n.d.	---	-
六溴環十二烷 / Hexabromocyclododecane (HBCDD) (CAS No.: 025637-99-4)	mg/kg	參考US EPA 3540C : 1996方法, 以氣相層析質譜儀檢測. / With reference to US EPA 3540C : 1996 method. Analysis was performed by GC/MS.	5	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)		法規 限值 (Limit)
				NO.1	NO.2	
多溴聯苯總和 / Sum of PBBs	mg/kg	參考US EPA 3540C方法, 以氣相層析儀/質譜儀檢測多溴聯苯和多溴聯苯醚含量. / With reference to US EPA 3540C for PBB/PBDE Content. Analysis was performed by GC/MS.	-	n.d.	n.d.	1000
一溴聯苯 / Monobromobiphenyl			5	n.d.	n.d.	-
二溴聯苯 / Dibromobiphenyl			5	n.d.	n.d.	-
三溴聯苯 / Tribromobiphenyl			5	n.d.	n.d.	-
四溴聯苯 / Tetrabromobiphenyl			5	n.d.	n.d.	-
五溴聯苯 / Pentabromobiphenyl			5	n.d.	n.d.	-
六溴聯苯 / Hexabromobiphenyl			5	n.d.	n.d.	-
七溴聯苯 / Heptabromobiphenyl			5	n.d.	n.d.	-
八溴聯苯 / Octabromobiphenyl			5	n.d.	n.d.	-
九溴聯苯 / Nonabromobiphenyl			5	n.d.	n.d.	-
十溴聯苯 / Decabromobiphenyl			5	n.d.	n.d.	-
多溴聯苯醚總和 / Sum of PBDEs			-	n.d.	n.d.	1000
一溴聯苯醚 / Monobromodiphenyl ether			5	n.d.	n.d.	-
二溴聯苯醚 / Dibromodiphenyl ether			5	n.d.	n.d.	-
三溴聯苯醚 / Tribromodiphenyl ether			5	n.d.	n.d.	-
四溴聯苯醚 / Tetrabromodiphenyl ether			5	n.d.	n.d.	-
五溴聯苯醚 / Pentabromodiphenyl ether			5	n.d.	n.d.	-
六溴聯苯醚 / Hexabromodiphenyl ether			5	n.d.	n.d.	-
七溴聯苯醚 / Heptabromodiphenyl ether			5	n.d.	n.d.	-
八溴聯苯醚 / Octabromodiphenyl ether			5	n.d.	n.d.	-
九溴聯苯醚 / Nonabromodiphenyl ether	5	n.d.	n.d.	-		
十溴聯苯醚 / Decabromodiphenyl ether	5	n.d.	n.d.	-		

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備註(Note) :

1. mg/kg = ppm
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. "---" = Not Conducted (未測項目)

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 $1\mu\text{g}/\text{m}^2$ 。
(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 $1\mu\text{g}/\text{m}^2$ of the coated material.)

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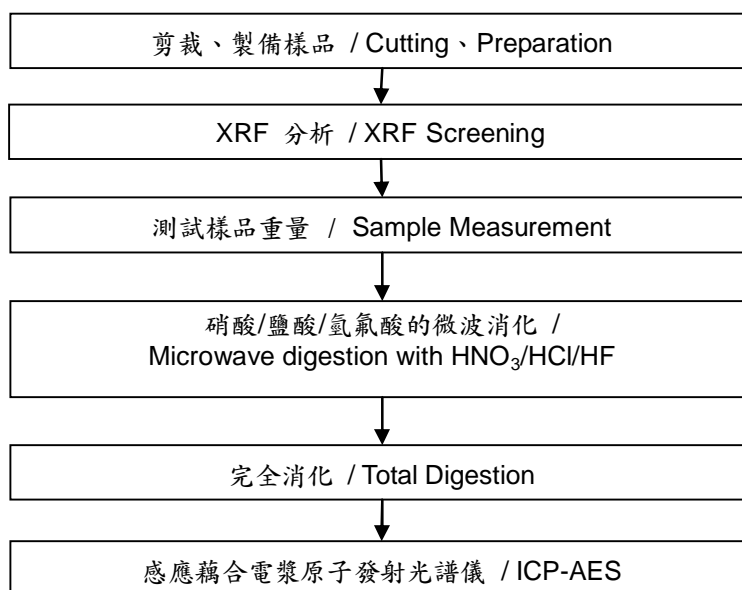
NO.1

依據 SONY QAR-05-002 的要求： / Per requirements of SONY QAR-05-002:

- 1) 根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 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

塑料的消化流程圖 - 鉛、鎘的測試方式為 EPA 3052 (無殘渣) /

Flow Chart of Digestion for Plastic -EPA 3052 for Pb、Cd (without residue)



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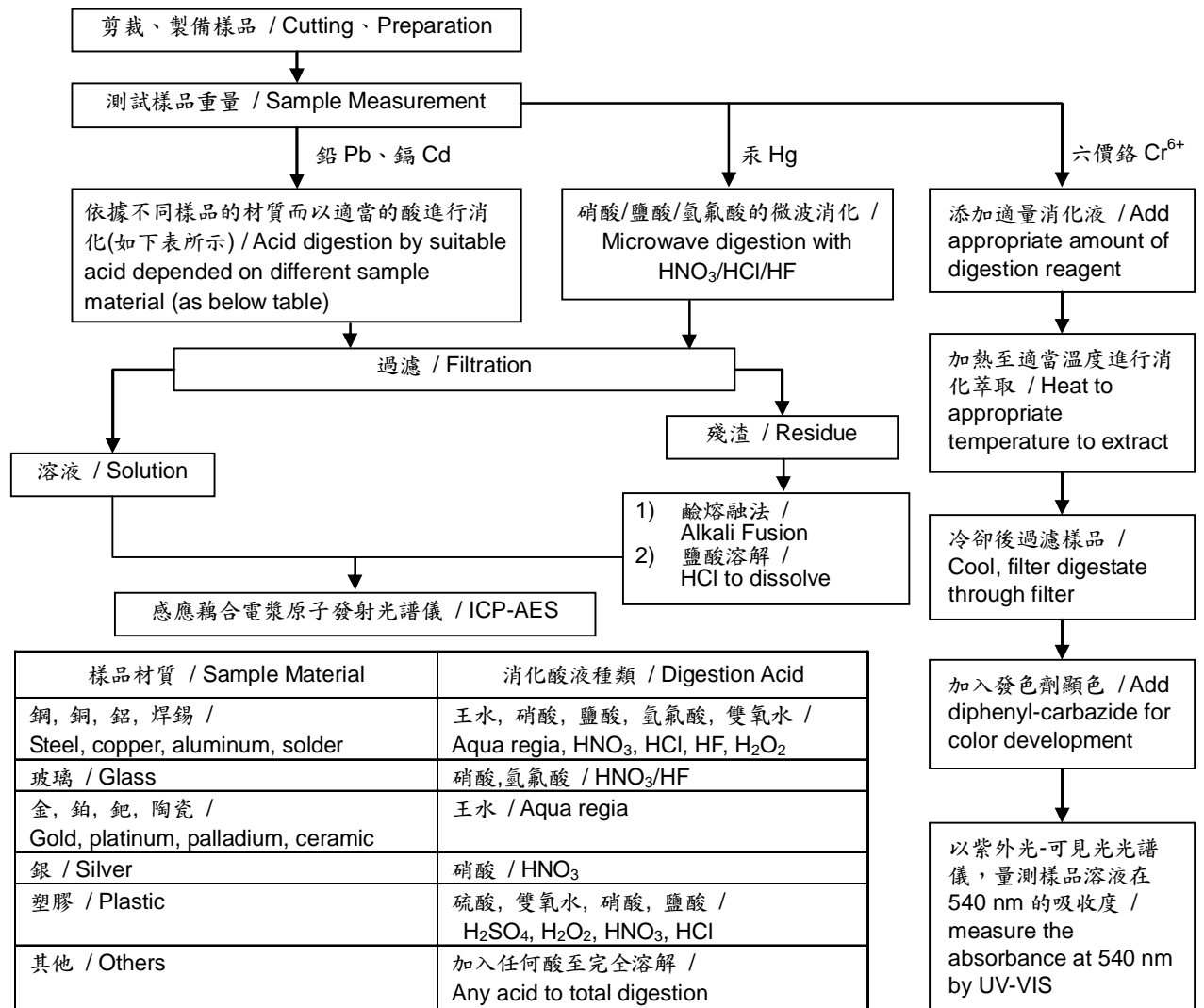
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NO.2

- 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



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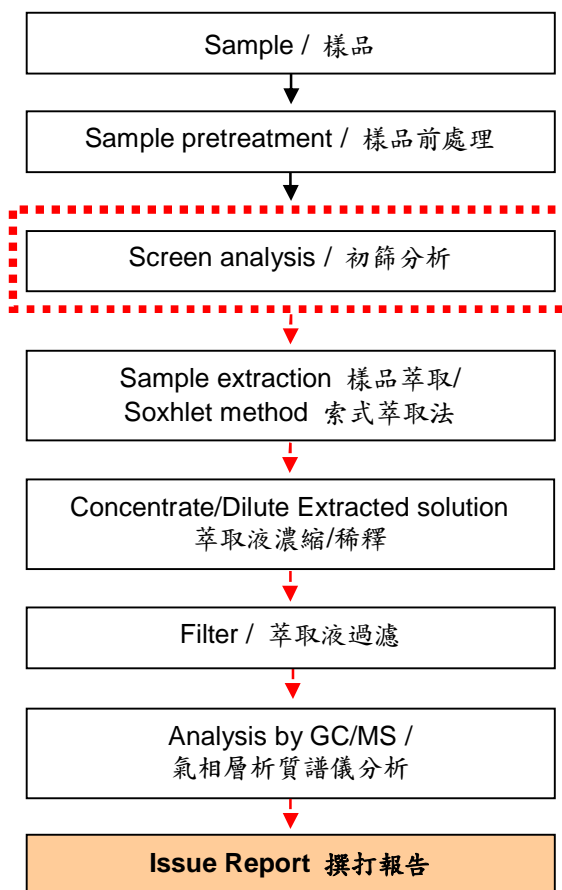
多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 1) 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 2) 測試負責人：陳新智 / Name of the person in charge of measurement: Shinjyh Chen

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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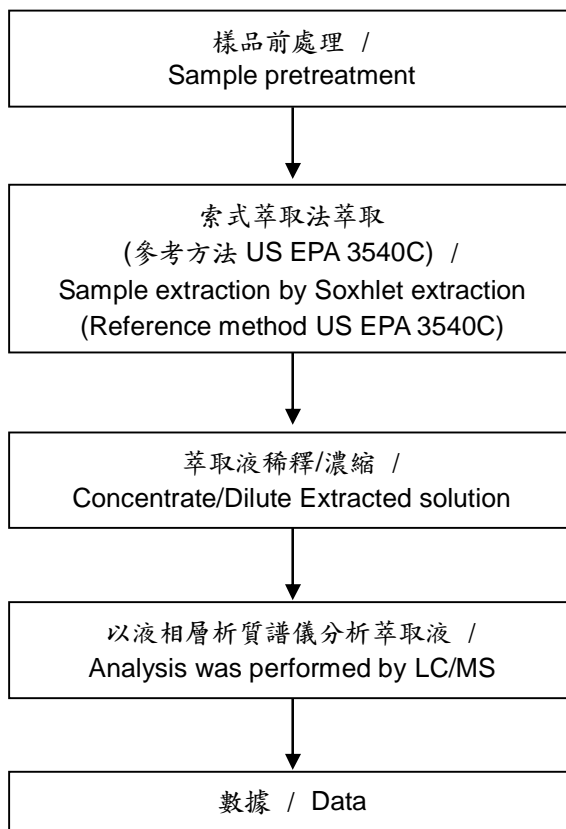
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全氟辛酸(銨)/全氟辛磺酸分析流程圖 / Analytical flow chart of PFOA/PFOS content

- 1) 測試人員：劉家瑗 / Name of the person who made measurement: Carrie Liu
- 2) 測試負責人：陳新智 / Name of the person in charge of measurement: Shinjyh Chen



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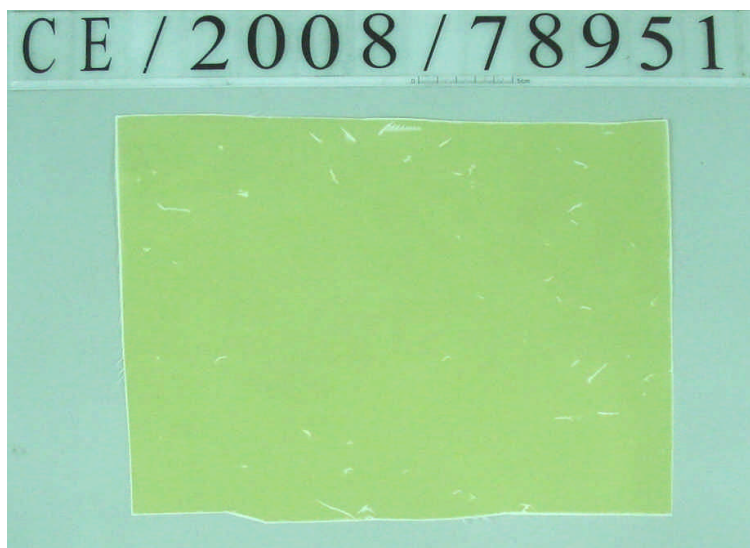
測試報告 Test Report

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測試部位(PART NAME) NO.1



測試部位(PART NAME) NO.2



** 報告結尾 **

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