

測試報告 Test Report

號碼(No.) : CE/2012/40405C 日期(Date) : 2012/07/16 頁數(Page) : 1 of 9

高柏科技有限公司

T-GLOBAL TECHNOLOGY CO., LTD.

桃園縣桃園市大仁路50巷33號

NO. 33, LN. 50, DAREN RD., TAoyUAN CITY, TAoyUAN COUNTY 33068, TAIWAN (R. O. C.)



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) : THERMAL INTERFACE GREASE (導熱膏)
樣品型號(Style/Item No.) : S720AB
收件日期(Sample Receiving Date) : 2012/04/03
測試期間(Testing Period) : 2012/04/03 TO 2012/04/11

=====
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指令2002/95/EC的更新指令2011/65/EU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 comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.)



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 : 白色膏狀 (WHITE PASTE)

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	
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321: 2008 - Clause 8方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 - Clause 8 and performed by ICP-AES.	2	n.d.	100
鉛 / Lead (Pb)	mg/kg	參考IEC 62321: 2008 - Clause 8方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 - Clause 8 and performed by ICP-AES.	2	n.d.	1000
汞 / Mercury (Hg)	mg/kg	參考IEC 62321: 2008 - Clause 7方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 - Clause 7 and performed by ICP-AES.	2	n.d.	1000
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考IEC 62321: 2008 - Annex C方法, 以UV-VIS檢測. / With reference to IEC 62321: 2008 - Annex C and performed by UV-VIS.	2	n.d.	1000
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. / With reference to US EPA 3540C: 1996. 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. / With reference to US EPA 3540C: 1996. 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)	法規 限值 (Limit)		
				No.1			
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321: 2008 - Annex A方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 - Annex A and performed by GC/MS.	-	n.d.	1000		
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.	1000
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)	mg/kg		50	n.d.	-		
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg		50	n.d.	-		
鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.	-		

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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)

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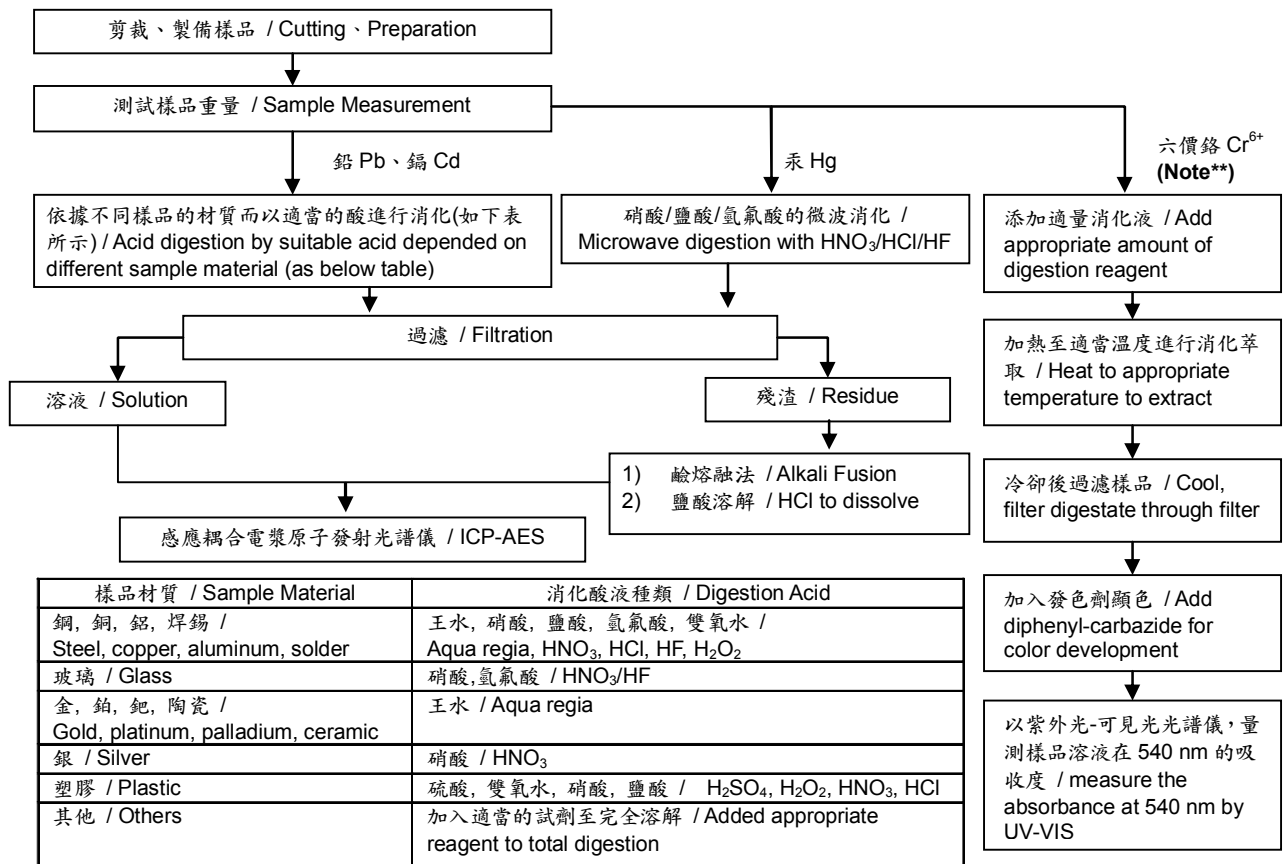
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張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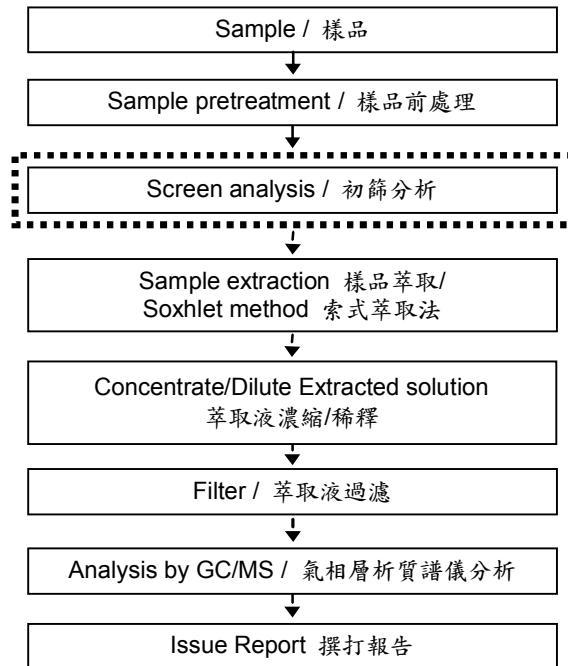
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多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

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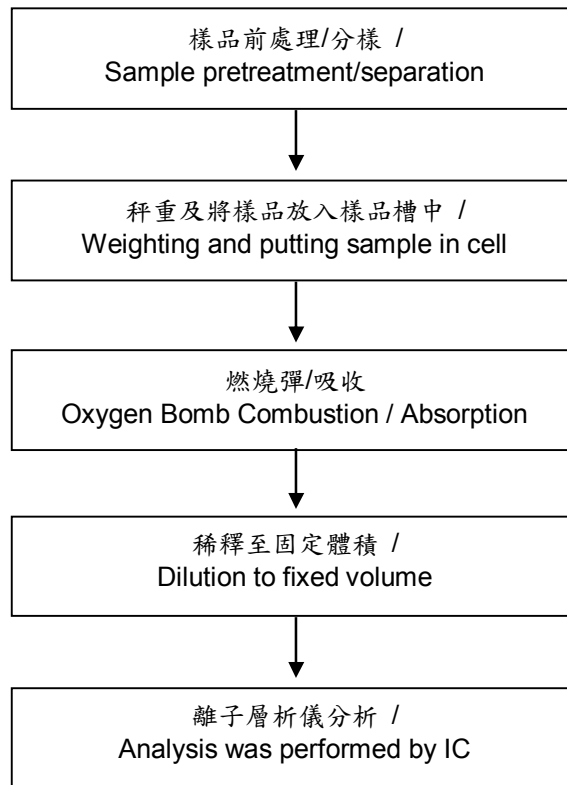
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鹵素分析流程圖 / Analytical flow chart of halogen content

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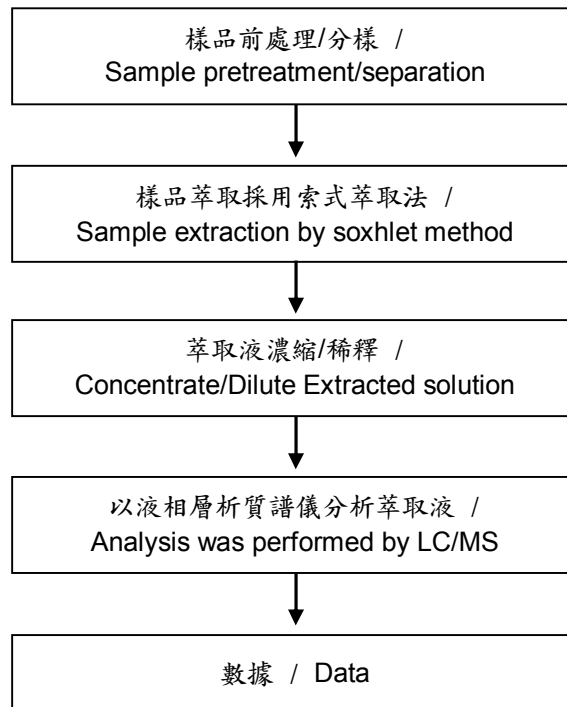
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索式萃取分析流程圖 / Analytical flow chart of Soxhlet extraction (LC/MS) procedure

- 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(銨)、苯並三唑類化合物 /
Test Items: PFOS/PFOA、Benzotriazole】**



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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.)

CE/2012/40405



** 報告結尾(End of Report) **

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