

## 測試報告

## Test Report

號碼(No.) : CE/2013/C4454 日期(Date) : 2013/12/30 頁數(Page) : 1 of 9

昇貿科技股份有限公司

SHENMAO TECHNOLOGY INC.

桃園縣觀音工業區工業二路12-1號

NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN



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) :

樣品名稱(Sample Description) : LEAD-FREE SOLDER  
樣品型號(Style/Item No.) : PF635  
收件日期(Sample Receiving Date) : 2013/12/24  
測試期間(Testing Period) : 2013/12/24 TO 2013/12/30

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

  
Troy Chang, Manager-Tech  
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 : 銀色金屬 (SILVER COLORED METAL)

| 測試項目<br>(Test Items)  | 單位<br>(Unit) | 測試方法<br>(Method)  | 方法偵測<br>極限值<br>(MDL) | 結果<br>(Result) |
|---|--------------|---|----------------------|----------------|
|   |              |   |                      | No.1           |
| 鎘 / Cadmium (Cd)  | mg/kg        | 參考IEC 62321-5: 2013方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.                                  | 2                    | n.d.           |
| 鉛 / Lead (Pb)   | mg/kg        | 參考IEC 62321-5: 2013方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.                                  | 2                    | 178            |
| 汞 / Mercury (Hg)  | mg/kg        | 參考IEC 62321-4: 2013方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES.                                  | 2                    | n.d.           |
| 六價鉻 / Hexavalent Chromium Cr(VI)  | **           | 參考IEC 62321: 2008 - Annex B方法, 以沸水萃取法檢測. / With reference to IEC 62321: 2008 - Annex B and performed by Boiling water extraction Method.# | #                    | Negative       |
| 六溴環十二烷及所有主要被辨別出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ - HBCDD, $\beta$ - HBCDD, $\gamma$ - HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8)) | 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 method. Analysis was performed by GC/MS.                            | 5                    | n.d.           |
| 鄰苯二甲酸甲苯基丁酯 / BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)  | %            | 參考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.  | 0.003                | n.d.           |

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桃園縣觀音工業區工業二路12-1號

NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN



| 測試項目<br>(Test Items)   | 單位<br>(Unit) | 測試方法<br>(Method)  | 方法偵測<br>極限值<br>(MDL) | 結果<br>(Result) |
|--|--------------|---|----------------------|----------------|
|  |              |   |                      | No.1           |
| 鄰苯二甲酸二(2-乙基己基)酯 / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No.: 117-81-7)   | %            | 參考EN 14372, 以氣相層析/質譜儀檢測之。<br>/ With reference to EN 14372. Analysis was performed by GC/MS.                       | 0.003                | n.d.           |
| 鄰苯二甲酸二異癸酯 / DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1) | %            | 參考EN 14372, 以氣相層析/質譜儀檢測之。<br>/ With reference to EN 14372. Analysis was performed by GC/MS.                       | 0.01                 | n.d.           |
| 鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0) | %            | 參考EN 14372, 以氣相層析/質譜儀檢測之。<br>/ With reference to EN 14372. Analysis was performed by GC/MS.                       | 0.01                 | n.d.           |
| 鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)                | %            | 參考EN 14372, 以氣相層析/質譜儀檢測之。<br>/ With reference to EN 14372. Analysis was performed by GC/MS.                       | 0.003                | n.d.           |
| 鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)                      | %            | 參考EN 14372, 以氣相層析/質譜儀檢測之。<br>/ With reference to EN 14372. Analysis was performed by GC/MS.                       | 0.003                | n.d.           |
| <b>多溴聯苯總和 / Sum of PBBs</b>  | 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.           |
| 一溴聯苯 / Monobromobiphenyl   | mg/kg        |   | 5                    | n.d.           |
| 二溴聯苯 / Dibromobiphenyl   | mg/kg        |   | 5                    | n.d.           |
| 三溴聯苯 / Tribromobiphenyl  | mg/kg        |   | 5                    | n.d.           |
| 四溴聯苯 / Tetrabromobiphenyl  | mg/kg        |   | 5                    | n.d.           |
| 五溴聯苯 / Pentabromobiphenyl  | mg/kg        |   | 5                    | n.d.           |
| 六溴聯苯 / Hexabromobiphenyl   | mg/kg        |   | 5                    | n.d.           |
| 七溴聯苯 / Heptabromobiphenyl  | mg/kg        |   | 5                    | n.d.           |
| 八溴聯苯 / Octabromobiphenyl   | mg/kg        |   | 5                    | n.d.           |
| 九溴聯苯 / Nonabromobiphenyl   | mg/kg        |   | 5                    | n.d.           |
| 十溴聯苯 / Decabromobiphenyl   | mg/kg        |   | 5                    | n.d.           |

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昇質科技股份有限公司

SHENMAO TECHNOLOGY INC.

桃園縣觀音工業區工業二路12-1號

NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN



| 測試項目<br>(Test Items)             | 單位<br>(Unit) | 測試方法<br>(Method)  | 方法偵測<br>極限值<br>(MDL) | 結果<br>(Result) |
|----------------------------------|--------------|---|----------------------|----------------|
|                                  |              |   |                      | No.1           |
| 多溴聯苯醚總和 / Sum of PBDEs           | 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.           |
| 一溴聯苯醚 / Monobromodiphenyl ether  | mg/kg        |   | 5                    | n.d.           |
| 二溴聯苯醚 / Dibromodiphenyl ether    | mg/kg        |   | 5                    | n.d.           |
| 三溴聯苯醚 / Tribromodiphenyl ether   | mg/kg        |   | 5                    | n.d.           |
| 四溴聯苯醚 / Tetrabromodiphenyl ether | mg/kg        |   | 5                    | n.d.           |
| 五溴聯苯醚 / Pentabromodiphenyl ether | mg/kg        |   | 5                    | n.d.           |
| 六溴聯苯醚 / Hexabromodiphenyl ether  | mg/kg        |   | 5                    | n.d.           |
| 七溴聯苯醚 / Heptabromodiphenyl ether | mg/kg        |   | 5                    | n.d.           |
| 八溴聯苯醚 / Octabromodiphenyl ether  | mg/kg        |   | 5                    | n.d.           |
| 九溴聯苯醚 / Nonabromodiphenyl ether  | mg/kg        |   | 5                    | n.d.           |
| 十溴聯苯醚 / Decabromodiphenyl ether  | mg/kg        | 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)
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<sup>2</sup> tested areas. / 該溶液濃度 $\geq$ 0.02 mg/kg with 50 cm<sup>2</sup> (tested areas)

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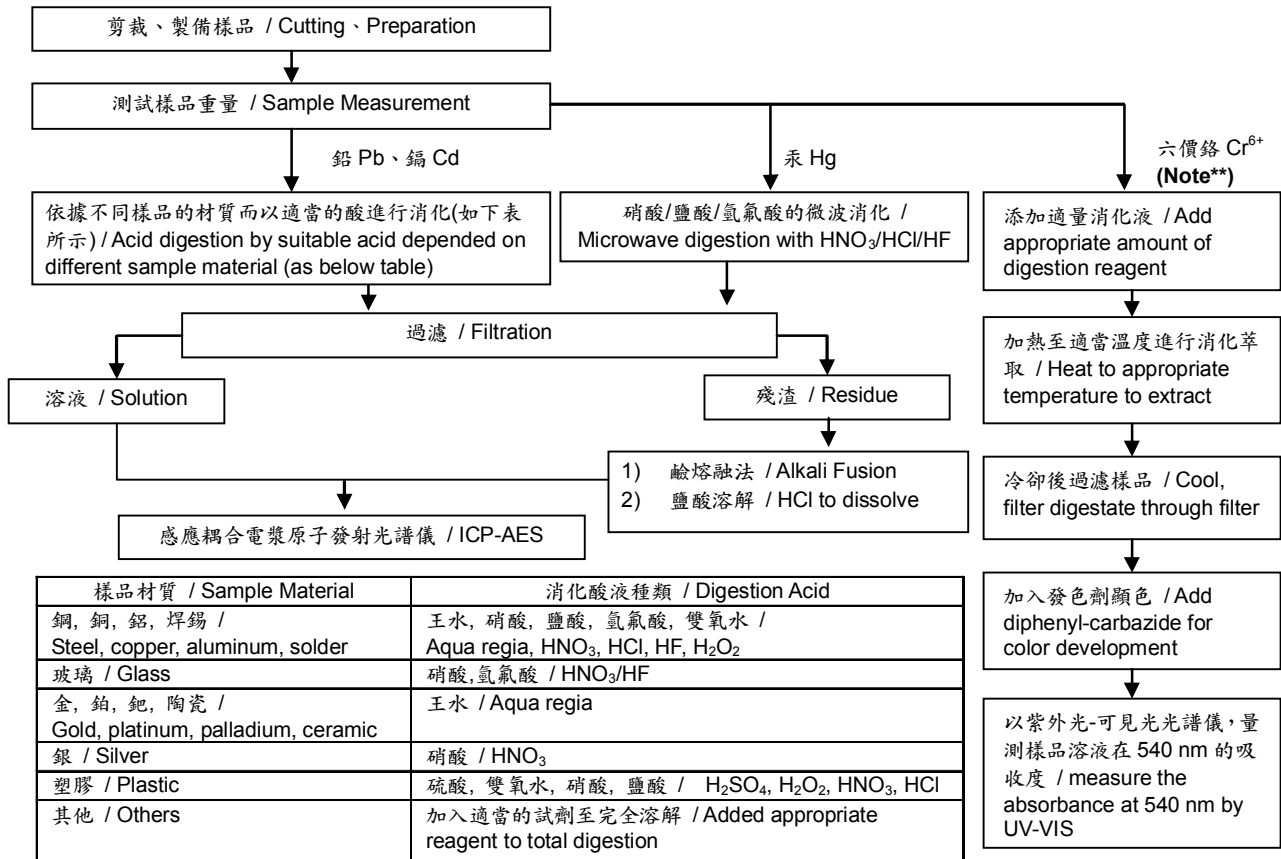
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
-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



### Note\*\* (For IEC 62321)

- (1) 針對非金屬材料加入鹼性消化液，加熱至 90~95℃ 萃取。 / For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.
- (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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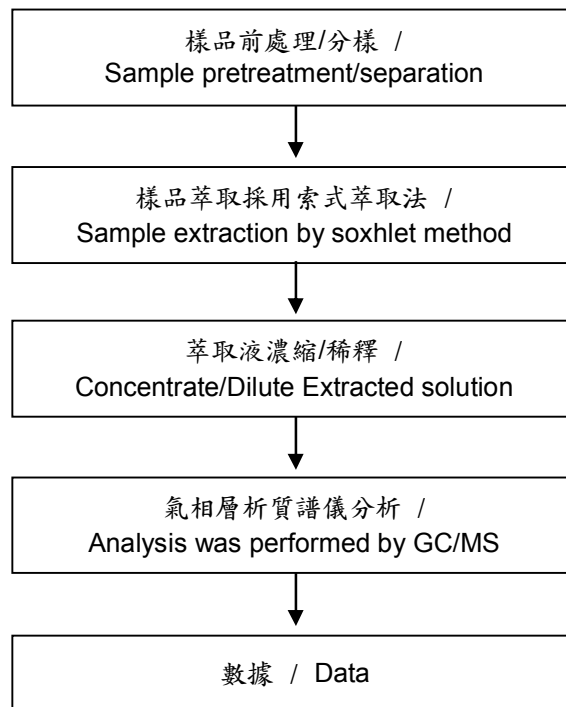
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NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN



### 可塑劑分析流程圖 / Analytical flow chart of phthalate content

- 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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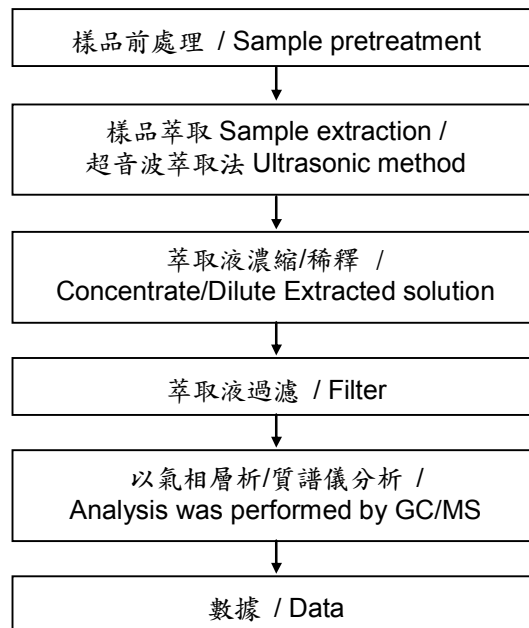
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### 六溴環十二烷分析流程圖 / HBCDD analytical flow chart

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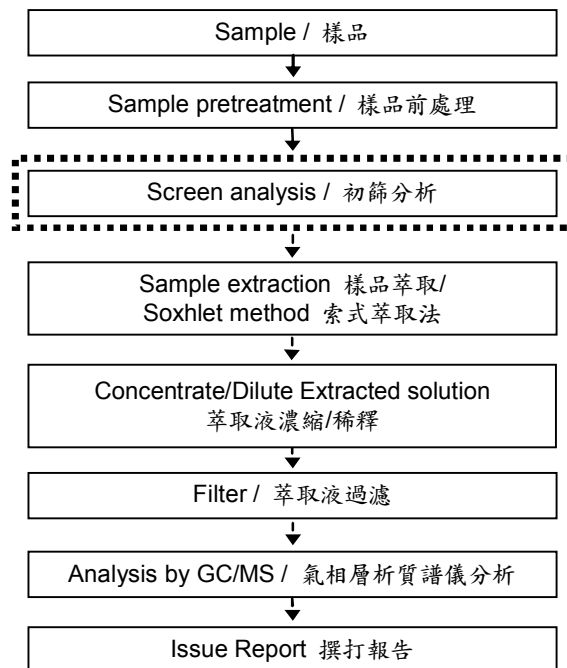
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### 多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 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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\* 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/2013/C4454



\*\* 報告結尾 (End of Report) \*\*