

測試報告 Test Report

號碼(No.) : KA/2009/C0841 日期(Date) : 2010/1/5 頁數(Page) : 1 of 9

國巨股份有限公司



YAGEO CORPORATION (YAGEO/ PHYCOMP/ COMPOSTAR BRAND)

231-45 台北縣新店市寶橋路233-1號3樓

3F, 233-1, BAOQIAO RD., XINDIEN, TAIPEI COUNTY 23145, 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) : ARRAY CHIP RESISTORS
樣品型號(Style/Item No.) : YC164 SERIES
收件日期(Sample Receiving Date) : 2009/12/11
測試期間(Testing Period) : 2009/12/11 TO 2010/1/5

=====
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

測試報告

Test Report

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測試結果(Test Results)

測試部位(PART NAME) NO.1 : 銀色/黑色/白色 ARRAY CHIP RESISTORS (SILVER/BLACK/WHITE ARRAY CHIP RESISTORS)

| 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, 用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, 用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 | 645 |
| 汞 / Mercury (Hg) | mg/kg | 參考IEC 62321: 2008方法, 用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) by alkaline extraction | mg/kg | 參考IEC 62321: 2008方法, 用UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS. | 2 | n.d. |

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|----------------------------------|--------------|--|----------------------|----------------|
| | | | | NO.1 |
| 多溴聯苯總和 / Sum of PBBs | mg/kg | 參考IEC 62321: 2008方法, 以氣相層析儀/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 | mg/kg | 參考IEC 62321: 2008方法, 以氣相層析儀/質譜儀檢測。 / With reference to IEC 62321: 2008 and performed by GC/MS. | - | 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. |

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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 |
| 鋇 / Barium (Ba) | 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鋇含量. / With reference to US EPA Method 3052 for Barium Content. Analysis was performed by ICP-AES. | 2 | 87.1 |
| 鈷 / Cobalt (Co) | 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鈷含量. / With reference to US EPA Method 3052 for Cobalt Content. Analysis was performed by ICP-AES. | 2 | 18.4 |
| 鉻 / Chromium (Cr) | 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鉻含量. / With reference to US EPA Method 3050B for Chromium Content. Analysis was performed by ICP-AES. | 2 | 1850 |
| 銅 / Copper (Cu) | 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銅含量. / With reference to US EPA Method 3052 for Copper Content. Analysis was performed by ICP-AES. | 2 | 678 |
| 鎂 / Magnesium (Mg) | 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鎂含量. / With reference to US EPA Method 3052 for Magnesium Content. Analysis was performed by ICP-AES. | 2 | 41.3 |

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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 |
| 鎳 / Nickel (Ni) | 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鎳含量. / With reference to US EPA Method 3052 for Nickel Content. Analysis was performed by ICP-AES. | 2 | 29950 |
| 鈀 / Palladium (Pd) | 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鈀含量. / With reference to US EPA 3052 for Palladium Content. Analysis was performed by ICP-AES. | 2 | 482 |
| 銀 / Silver (Ag) | 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銀含量. / With reference to US EPA Method 3052 for Silver Content. Analysis was performed by ICP-AES. | 2 | 21200 |
| 錫 / Tin (Sn) | 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錫含量. / With reference to US EPA 3052 for Tin Content. Analysis was performed by ICP-AES. | 2 | 28800 |

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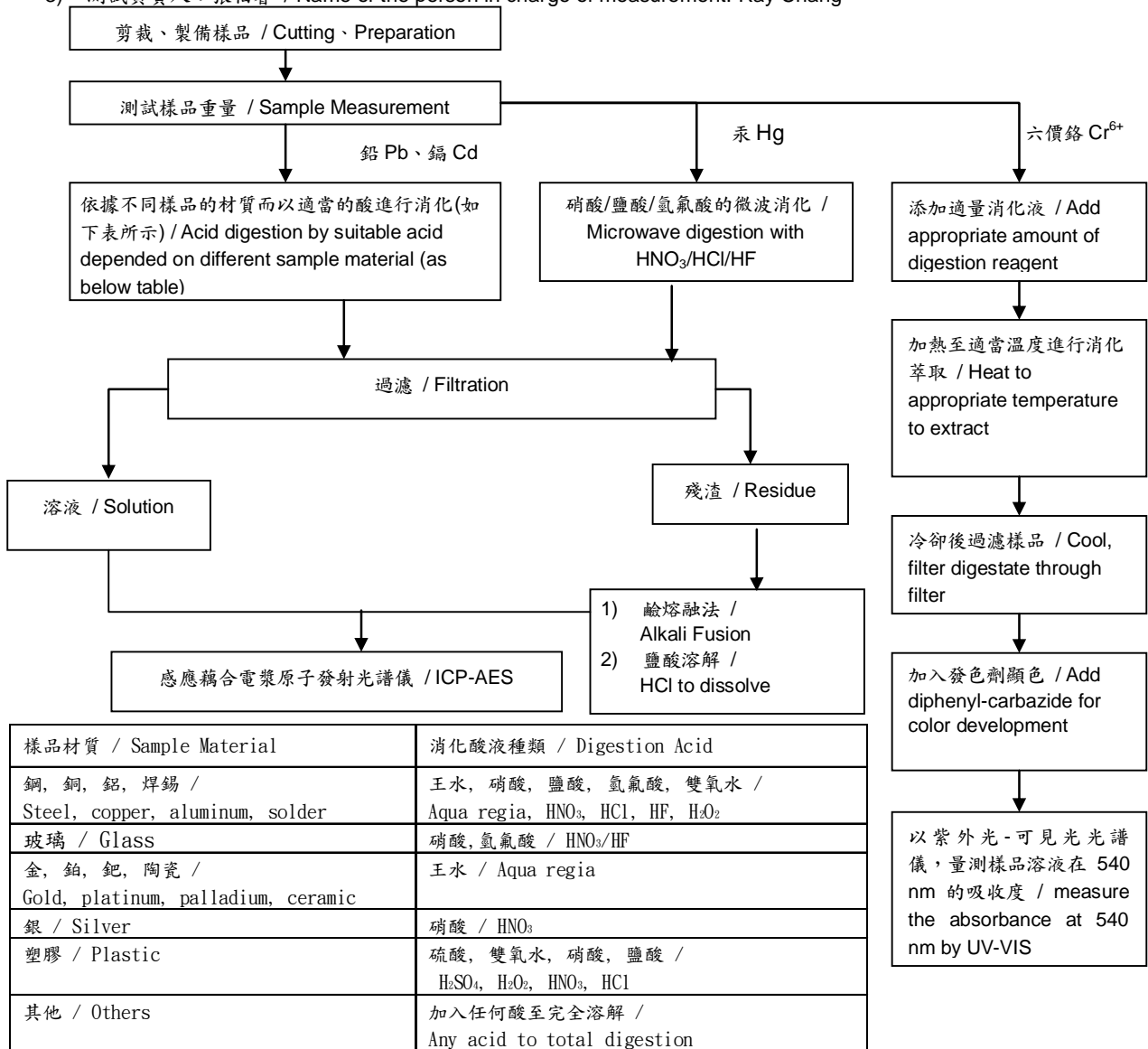
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) 測試人員：李宏明 / Name of the person who made measurement: Hungming Li
- 3) 測試負責人：張伯睿 /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



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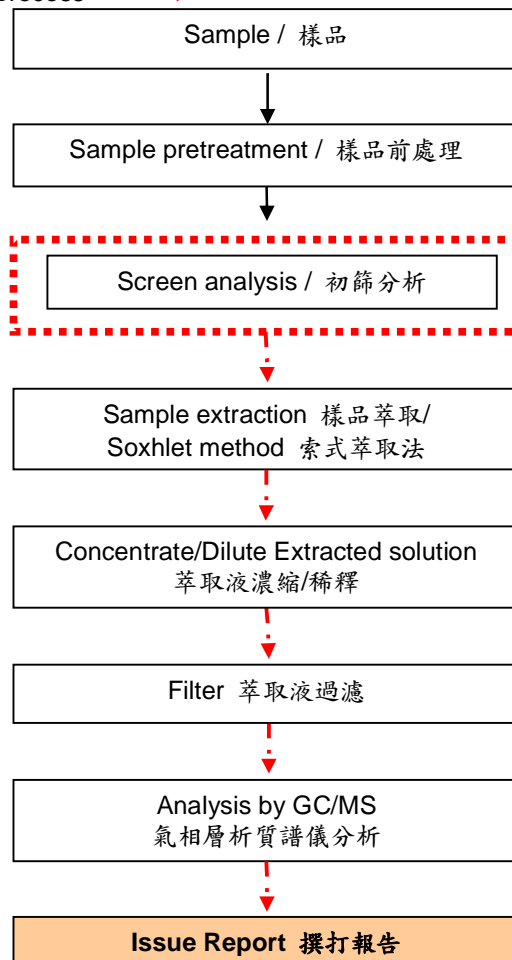
多溴聯苯/多溴聯苯醚 分析流程圖 / PBB/PBDE analytical FLOW CHART

- 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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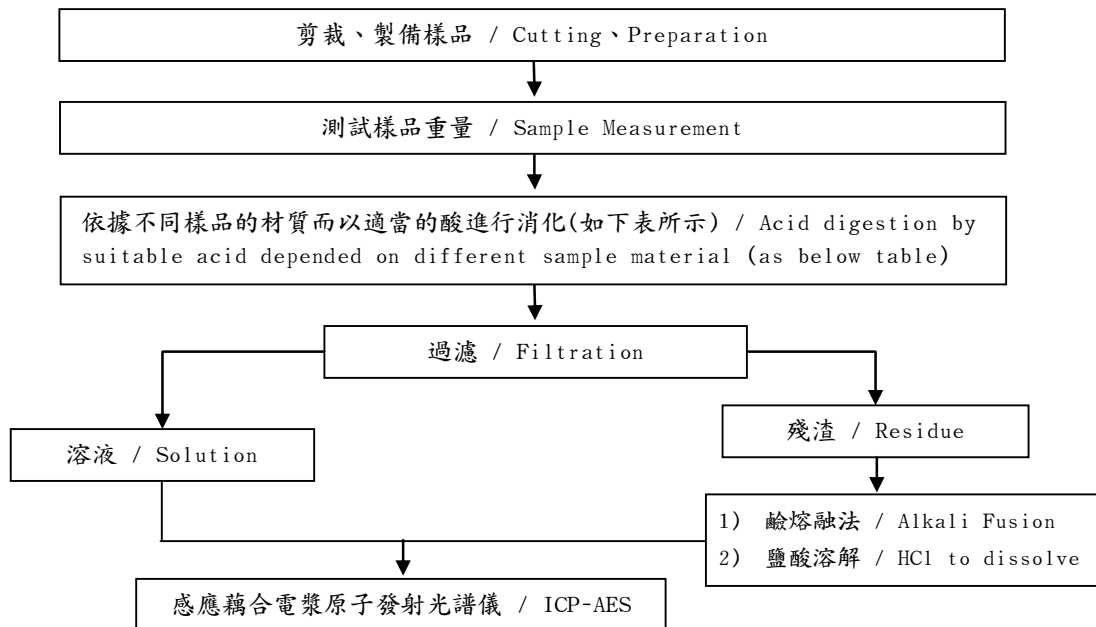
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) 測試人員：李宏明 / Name of the person who made measurement: Hungming Li
- 3) 測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang

元素以 ICP-AES 分析的消化流程圖

(Flow Chart of digestion for the elements analysis performed by ICP-AES)



| | |
|--|---|
| 鋼, 銅, 鋁, 焊錫 / Steel, copper, aluminum, solder | 王水, 硝酸, 鹽酸, 氫氟酸, 雙氧水 / Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂ |
| 玻璃 / Glass | 硝酸, 氫氟酸 / HNO ₃ /HF |
| 金, 鉑, 鈀, 陶瓷 / Gold, platinum, palladium, ceramic | 王水 / Aqua regia |
| 銀 / Silver | 硝酸 / HNO ₃ |
| 塑膠 / Plastic | 硫酸, 雙氧水, 硝酸, 鹽酸 / H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl |
| 其他 / Others | 加入任何酸至完全溶解 / Any acid to total digestion |

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** 報告結尾(End of Report) **

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