

## 測試報告 Test Report

號碼(No.): KA/2010/10190

日期(Date): 2010/01/22

頁數(Page): 1 of 7

國巨股份有限公司楠梓分公司(國巨/飛元/華亞)



YAGEO CORPORATION NANTZE BRANCH (YAGEO/PHYCOMP/COMPOSTAR)

高雄市楠梓加工出口區西三街16號

16, WEST 3RD STREET N. E. P. Z. KAOHSIUNG, 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) : MULTI-LAYER CERAMIC CAPACITOR  
樣品型號(Style/Item No.) : MLCC X5R 1812 SERIES  
收件日期(Sample Receiving Date) : 2010/01/06  
測試期間(Testing Period) : 2010/01/06 TO 2010/01/22

=====  
測試需求(Test Requested) : 參照 RoHS 2002/95/EC 及其修定指令要求. (In accordance with the RoHS Directive 2002/95/EC, and its amendment directives).

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

**Ray Chang / Asst. Manager**  
Signed for and on behalf of  
SGS Taiwan Limited

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### 測試方法(Test Method)

: 參考IEC 62321: 2008方法檢測。(With reference to IEC 62321: 2008. Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products).

- (1) 用感應耦合電漿原子發射光譜儀檢測鎘含量。 / Determination of Cadmium by ICP-AES.
- (2) 用感應耦合電漿原子發射光譜儀檢測鉛含量。 / Determination of Lead by ICP-AES.
- (3) 用感應耦合電漿原子發射光譜儀檢測汞含量。 / Determination of Mercury by ICP-AES.
- (4) 用UV-VIS檢測六價鉻含量。 / Determination of Hexavalent Chromium by UV/Vis Spectrometry.
- (5) 以氣相層析儀/質譜儀檢測多溴聯苯和多溴聯苯醚含量。 / Determination of PBB and PBDE by GC/MS.

### 測試結果(Test Results)

: 請見下一頁 (Please refer to next pages).

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測試結果(Test Results) 單位(Unit): mg/kg

測試項目 (Test Items)	測試方法 Method (Refer to)	結果 (Result)	方法偵測 極限值 (MDL)
		No.1	
鎘 / Cadmium (Cd)	(1)	n.d.	2
鉛 / Lead (Pb)	(2)	n.d.	2
汞 / Mercury (Hg)	(3)	n.d.	2
六價鉻 / Hexavalent Chromium Cr(VI) by alkaline extraction	(4)	n.d.	2
<b>多溴聯苯總和 / Sum of PBBs</b>	(5)	n.d.	-
一溴聯苯 / Monobromobiphenyl		n.d.	5
二溴聯苯 / Dibromobiphenyl		n.d.	5
三溴聯苯 / Tribromobiphenyl		n.d.	5
四溴聯苯 / Tetrabromobiphenyl		n.d.	5
五溴聯苯 / Pentabromobiphenyl		n.d.	5
六溴聯苯 / Hexabromobiphenyl		n.d.	5
七溴聯苯 / Heptabromobiphenyl		n.d.	5
八溴聯苯 / Octabromobiphenyl		n.d.	5
九溴聯苯 / Nonabromobiphenyl		n.d.	5
十溴聯苯 / Decabromobiphenyl		n.d.	5
<b>多溴聯苯醚總和 / Sum of PBDEs</b>		n.d.	-
一溴聯苯醚 / Monobromodiphenyl ether		n.d.	5
二溴聯苯醚 / Dibromodiphenyl ether		n.d.	5
三溴聯苯醚 / Tribromodiphenyl ether		n.d.	5
四溴聯苯醚 / Tetrabromodiphenyl ether		n.d.	5
五溴聯苯醚 / Pentabromodiphenyl ether		n.d.	5
六溴聯苯醚 / Hexabromodiphenyl ether		n.d.	5
七溴聯苯醚 / Heptabromodiphenyl ether		n.d.	5
八溴聯苯醚 / Octabromodiphenyl ether		n.d.	5
九溴聯苯醚 / Nonabromodiphenyl ether	n.d.	5	
十溴聯苯醚 / Decabromodiphenyl ether	n.d.	5	

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### 測試部位描述 (TEST PART DESCRIPTION):

NO.1 : 銀色/棕色 MULTI-LAYER CERAMIC CAPACITOR (SILVER/BROWN MULTI-LAYER CERAMIC CAPACITOR)

### 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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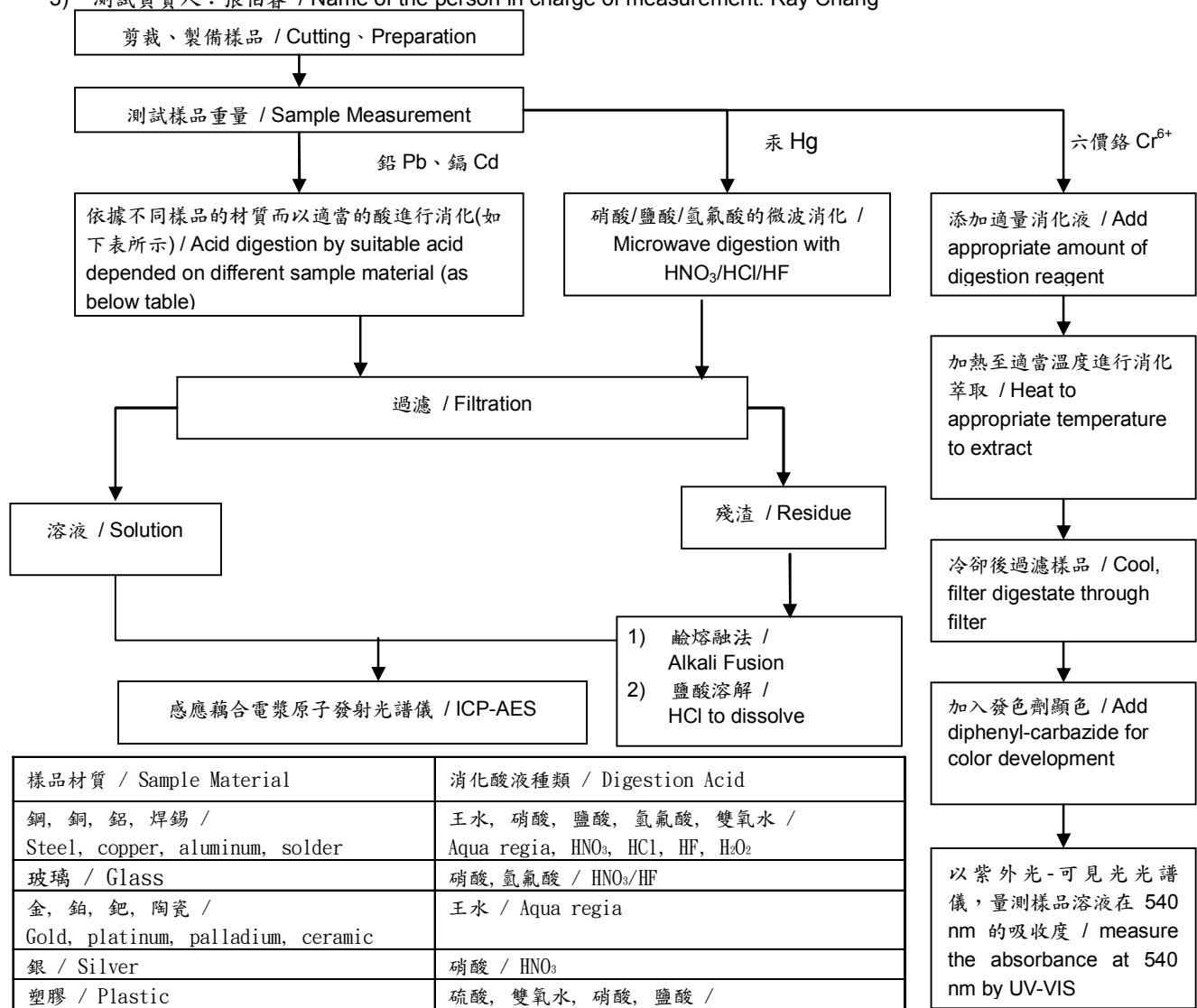


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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 測試人員：李宏明 / Name of the person who made measurement: Hungming Li
- 3) 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



樣品材質 / Sample Material	消化酸液種類 / Digestion Acid
鋼, 銅, 鋁, 焊錫 / Steel, copper, aluminum, solder	王水, 硝酸, 鹽酸, 氫氟酸, 雙氧水 / Aqua regia, HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub>
玻璃 / Glass	硝酸, 氫氟酸 / HNO <sub>3</sub> /HF
金, 鉑, 鈮, 陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO <sub>3</sub>
塑膠 / Plastic	硫酸, 雙氧水, 硝酸, 鹽酸 / H <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> O <sub>2</sub> , HNO <sub>3</sub> , HCl
其他 / Others	加入任何酸至完全溶解 / Any acid to total digestion

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

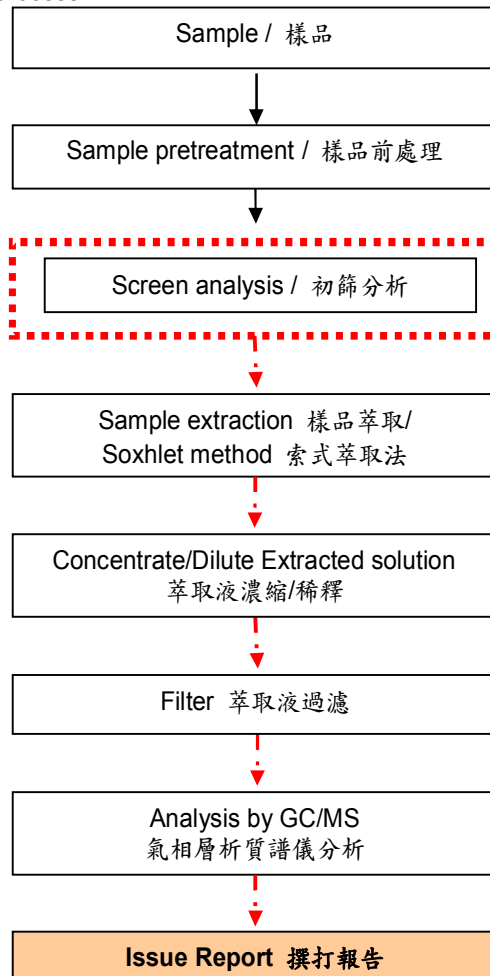
1)測試人員: 曹嘉琪 / Name of the person who made measurement: Anson Tsao

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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\*\* 報告結尾(End of Report) \*\*

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