

## 測試報告

## Test Report

號碼(No.) : CE/2013/83041 日期(Date) : 2013/08/23 頁數(Page) : 1 of 9

元祥金屬工業股份有限公司

YUANG HSIAN METAL INDUSTRIAL CORP.

彰化市彰水路175號

NO. 175, CHANG SHOEI ROAD, CHANG HUA CITY, 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) :

送樣廠商(Sample Submitted By) : 元祥金屬工業股份有限公司 (YUANG HSIAN METAL INDUSTRIAL CORP.)

樣品名稱(Sample Description) : 銅合金 CDA122 陽極磷銅 (PHOSPHOR COPPER ANODE CDA122)

收件日期(Sample Receiving Date) : 2013/08/19

測試期間(Testing Period) : 2013/08/19 TO 2013/08/23

=====  
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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# 測試報告

號碼(No.) : CE/2013/83041 日期(Date) : 2013/08/23 頁數(Page) : 2 of 9

# Test Report

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## 測試結果(Test Results)

測試部位(PART NAME)No.1 : 銅色金屬球 (COPPER COLORED METAL BALL)

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 62321-5: 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	n.d.
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)	mg/kg	參考IEC 62321: 2008方法, 以UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
磷 / Phosphorus (P)	mg/kg	參考US EPA 3052方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA Method 3052. Analysis was performed by ICP-AES.	2	637

# 測試報告

## Test Report

號碼(No.) : CE/2013/83041 日期(Date) : 2013/08/23 頁數(Page) : 3 of 9

元祥金屬工業股份有限公司

YUANG HSIAN METAL INDUSTRIAL CORP.

彰化市彰水路175號

NO. 175, CHANG SHOEI ROAD, CHANG HUA CITY, TAIWAN



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		
<b>多溴聯苯總和 / Sum of PBBs</b>	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 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.		
<b>多溴聯苯醚總和 / Sum of PBDEs</b>					-	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.		
<b>鹵素 / Halogen</b>						
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)			50	n.d.		
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)			50	n.d.		
鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 14362-44-8)			50	n.d.		

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## 測試報告

## Test Report

號碼(No.) : CE/2013/83041 日期(Date) : 2013/08/23 頁數(Page) : 4 of 9

元祥金屬工業股份有限公司

YUANG HSIAN METAL INDUSTRIAL CORP.

彰化市彰水路175號

NO. 175, CHANG SHOEI ROAD, CHANG HUA CITY, TAIWAN



### 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)

## 測試報告

## Test Report

號碼(No.) : CE/2013/83041 日期(Date) : 2013/08/23 頁數(Page) : 5 of 9

元祥金屬工業股份有限公司

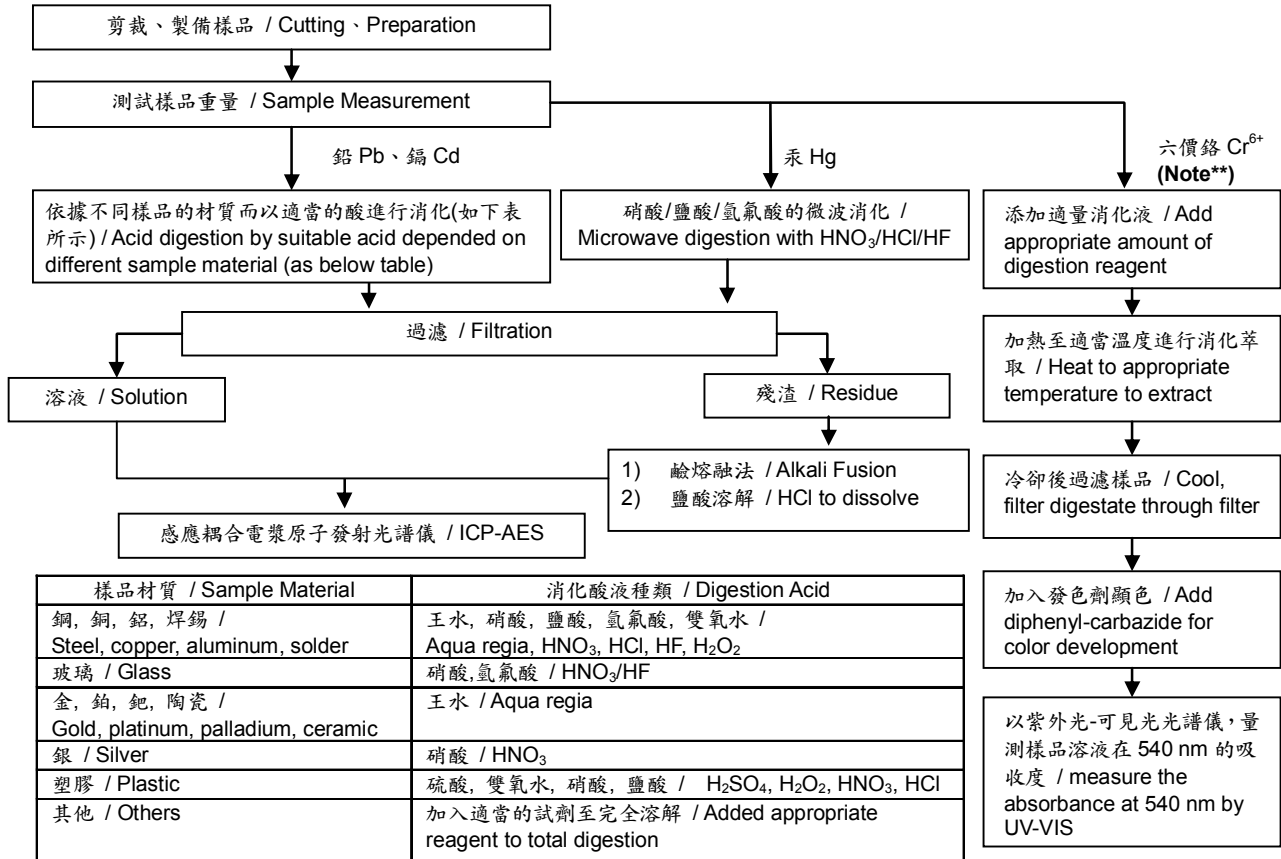
YUANG HSIAN METAL INDUSTRIAL CORP.

彰化市彰水路175號

NO. 175, CHANG SHOEI ROAD, CHANG HUA CITY, TAIWAN



- 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\*\* :** (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.

## 測試報告

## Test Report

號碼(No.) : CE/2013/83041 日期(Date) : 2013/08/23 頁數(Page) : 6 of 9

元祥金屬工業股份有限公司

YUANG HSIAN METAL INDUSTRIAL CORP.

彰化市彰水路175號

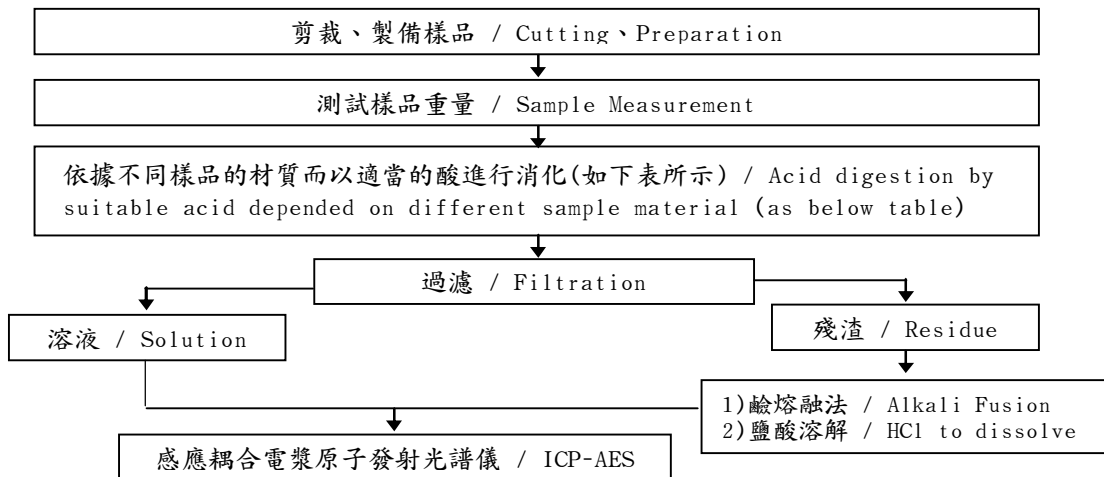
NO. 175, CHANG SHOEI ROAD, CHANG HUA CITY, TAIWAN



- 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: Climgreat Yang
- 3) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy 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 <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, 鈱, 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	加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion

## 測試報告

## Test Report

號碼(No.) : CE/2013/83041 日期(Date) : 2013/08/23 頁數(Page) : 7 of 9

元祥金屬工業股份有限公司

YUANG HSIAN METAL INDUSTRIAL CORP.

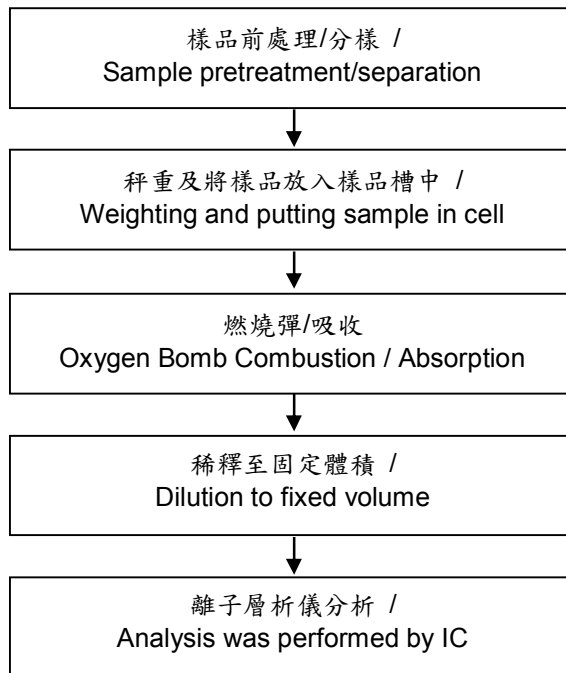
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### 鹵素分析流程圖 / Analytical flow chart of halogen content

- 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



## 測試報告

## Test Report

號碼(No.) : CE/2013/83041 日期(Date) : 2013/08/23 頁數(Page) : 8 of 9

元祥金屬工業股份有限公司

YUANG HSIAN METAL INDUSTRIAL CORP.

彰化市彰水路175號

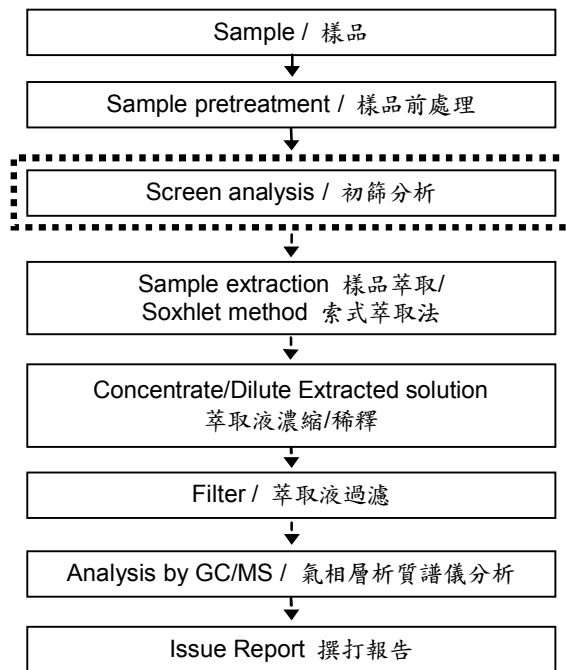
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### 多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 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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## 測試報告

## Test Report

號碼(No.) : CE/2013/83041 日期(Date) : 2013/08/23 頁數(Page) : 9 of 9

元祥金屬工業股份有限公司

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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/2013/83041



\*\* 報告結尾 (End of Report) \*\*