

## 測試報告 Test Report

號碼(No.) : CE/2017/93784 日期(Date) : 2017/09/27

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信宇科技股份有限公司  
SIN YU TECHNOLOGY INC.

744臺南市新市區潭頂里115號

NO. 115, TANDING, XINSHI DIST., TAINAN CITY, 744 TAIWAN, R. O. C.



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) : 信宇科技股份有限公司 (SIN YU TECHNOLOGY INC.)  
樣品名稱(Sample Description) : PVC INSULATED WIRE (聚氣乙烯絕緣纜線)  
收件日期(Sample Receiving Date) : 2017/09/20  
測試期間(Testing Period) : 2017/09/20 TO 2017/09/27

=====  
測試需求(Test Requested) : 依據客戶指定, 參考RoHS2011/65/EU Annex II及其修訂指令(EU) 2015/863測試鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP. (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).)

測試方法(Test Method) : 請參閱下一頁 (Please refer to following pages).

測試結果(Test Results) : 請參閱下一頁 (Please refer to following 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 : 銀色金屬線鍍層 (PLATING LAYER OF SILVER COLORED METAL WIRE)  
 測試部位(PART NAME)No. 2 : 銀色金屬線底材 (BASE MATERIAL OF SILVER COLORED METAL WIRE)  
 測試部位(PART NAME)No. 3 : 黑色塑膠外被(不含印刷) (BLACK PLASTIC JACKET (EXCLUDING THE PRINTED))

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	No. 2	No. 3
鎘 / Cadmium (Cd)	mg/kg	酸洗脫鍍層, 參考IEC 62321-5 (2013), 以感應耦合電漿原子發射光譜儀檢測. / IEC 62321-5 (2013) application of modified digestion by surface etching and performed by ICP-AES.	2	n. d.	---	---
	mg/kg	參考IEC 62321-5 (2013), 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.	n. d.
鉛 / Lead (Pb)	mg/kg	酸洗脫鍍層, 參考IEC 62321-5 (2013), 以感應耦合電漿原子發射光譜儀檢測. / IEC 62321-5 (2013) application of modified digestion by surface etching and performed by ICP-AES.	2	64.0	---	---
	mg/kg	參考IEC 62321-5 (2013), 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.	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	No. 2	No. 3
汞 / Mercury (Hg)	mg/kg	酸洗脫鍍層, 參考IEC 62321-4 (2013), 以感應耦合電漿原子發射光譜儀檢測. / IEC 62321-4 (2013) application of modified digestion by surface etching and performed by ICP-AES.	2	n. d.	---	---
	mg/kg	參考IEC 62321-4 (2013), 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.	n. d.
六價鉻 / Hexavalent Chromium Cr(VI)(#2)	µg/cm <sup>2</sup>	參考IEC 62321-7-1 (2015), 以UV-VIS檢測. / With reference to IEC 62321-7-1 (2015) and performed by UV-VIS.	0.10	n. d.	n. d.	---
六價鉻 / Hexavalent Chromium Cr(VI) (◆)	mg/kg	參考IEC 62321-7-2 (2017), 以UV-VIS檢測; 參考IEC 62321-5 (2013), 以ICP-AES檢測. / With reference to IEC 62321-7-2 (2017) and performed by UV-VIS. ; With reference to IEC 62321-5 (2013) and performed by ICP-AES.	8	---	---	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	No. 2	No. 3
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321-6 (2015), 以氣相層析/質譜儀檢測。 / With reference to IEC 62321-6 (2015) 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.
多溴聯苯醚總和 / Sum of PBDEs	mg/kg		-	---	---	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.	

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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	No. 2	No. 3
鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No. : 85-68-7)	mg/kg	參考IEC 62321-8 (2017), 以氣相層析儀/質譜儀檢測. / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	---	---	n. d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No. : 84-74-2)	mg/kg		50	---	---	n. d.
鄰苯二甲酸二異丁酯 / DIBP (Di-isobutyl phthalate) (CAS No. : 84-69-5)	mg/kg		50	---	---	n. d.
鄰苯二甲酸二(2-乙基己基)酯 / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No. : 117-81-7)	mg/kg		50	---	---	235

### 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. "---" = Not Conducted (未測項目)
6. (#2) =
  - a. 當六價鉻結果大於0.13  $\mu\text{g}/\text{cm}^2$  , 表示樣品表層含有六價鉻. / The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13  $\mu\text{g}/\text{cm}^2$ . The sample coating is considered to contain Cr(VI).
  - b. 當六價鉻結果為n. d. (濃度小於0.10  $\mu\text{g}/\text{cm}^2$ ) , 表示表層不含六價鉻. / The sample is negative for Cr(VI) if Cr(VI) is n. d. (concentration less than 0.10  $\mu\text{g}/\text{cm}^2$ ). The coating is considered a non-Cr(VI) based coating
  - c. 當六價鉻結果介於 0.10 及 0.13  $\mu\text{g}/\text{cm}^2$  時, 無法確定塗層是否含有六價鉻. / The result between 0.10  $\mu\text{g}/\text{cm}^2$  and 0.13  $\mu\text{g}/\text{cm}^2$  is considered to be inconclusive - unavoidable coating variations may influence the determination.

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### 7. (◆) :

若鉻含量小於六價鉻之方法偵測極限值，則六價鉻為n. d.，不須再測試六價鉻。

The result of Cr(VI) is "n.d." as the result of Chromium (Cr) is less than the MDL of Cr(VI), and confirmation test of Cr(VI) is not required.

若鉻含量未小於六價鉻之方法偵測極限值，需進行六價鉻測試。

If the Chromium (Cr) content is not less than the MDL of Cr(VI), confirmation test of Cr(VI) is required.

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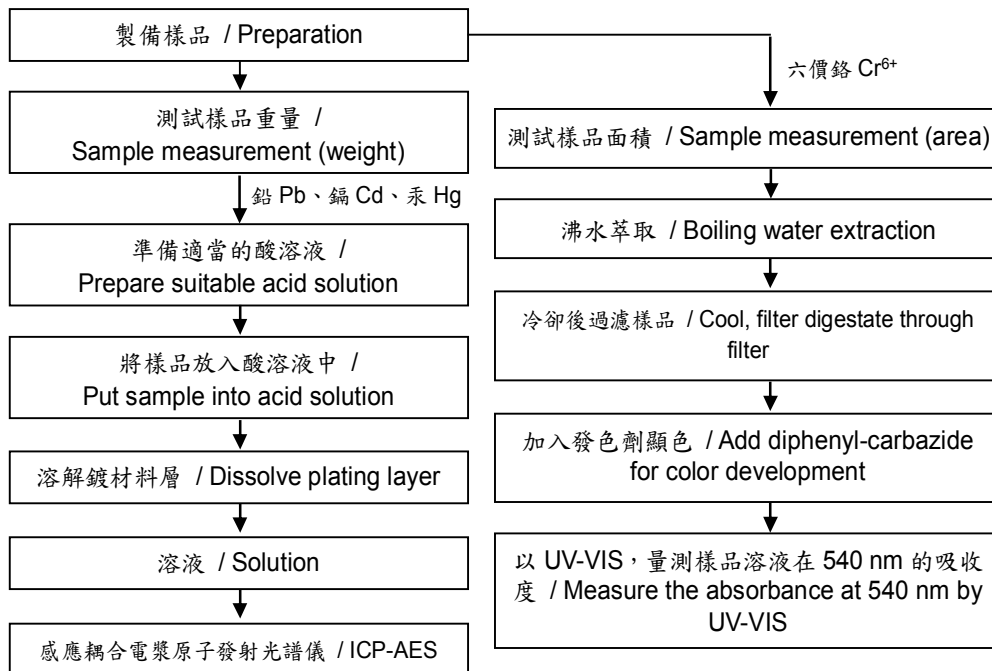


No. 1

根據以下的流程圖之條件, 樣品之外部鍍層已完全溶解。(六價鉻測試方法除外) / The plating layer of samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)

- 測試人員: 王志瑋 / Technician: JR Wang
- 測試負責人: 張啟興 / Supervisor: Troy Chang

### 鍍層重金屬測試流程圖 / Flow Chart of Stripping method for metal analysis



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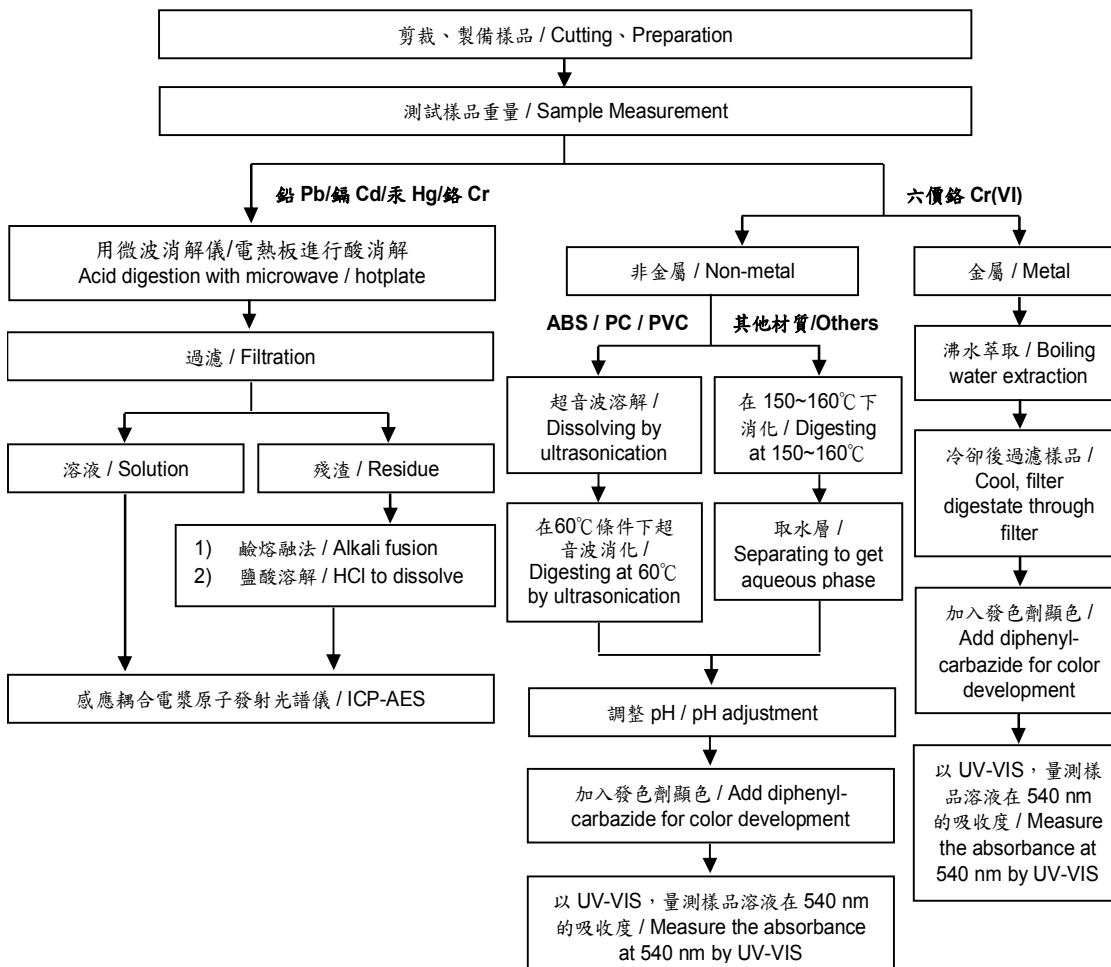
No. 2 and No. 3

### 重金屬流程圖 / Analytical flow chart of Heavy Metal

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)

- 測試人員：王志瑋 / Technician : JR Wang
- 測試負責人：張啟興 / Supervisor: Troy Chang





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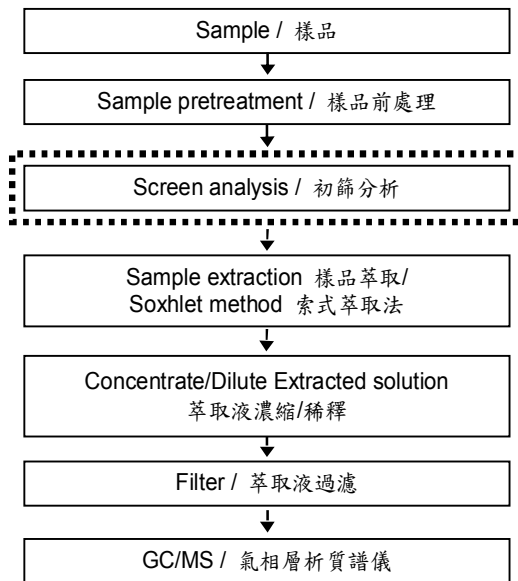
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### 多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBB/PBDE

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: 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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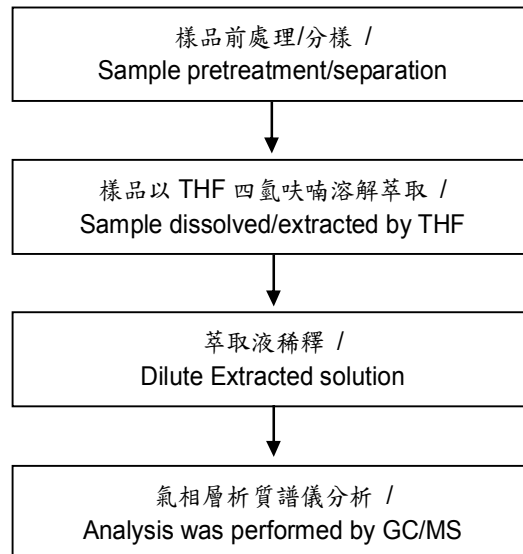
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### 可塑劑分析流程圖 / Analytical flow chart - Phthalate

- 測試人員：徐毓明 / Technician: Andy Hsu
- 測試負責人：張啟興 / Supervisor : Troy Chang

#### **【測試方法/Test method: IEC 62321-8】**



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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/2017/93784 NO.1



### CE/2017/93784 NO.2



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### CE/2017/93784 NO.3



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