

## 測試報告 Test Report

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巨昌金屬有限公司

JUN CHUAN INTERNATIONAL CO., LTD.

新北市五股區四維路27巷1號

NO. 1, LANE 27, SIWEI RD., WUGU DIST., NEW TAIPEI CITY 24874, 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) : 巨昌金屬有限公司 (JUN CHUAN INTERNATIONAL CO., LTD.)  
樣品名稱(Sample Description) : FREE CUTTING STEEL (硫磺快削鋼)  
樣品型號(Style/Item No.) : SUM23 / AISI 1215 / SAE 1215MS  
收件日期(Sample Receiving Date) : 2018/01/02  
測試期間(Testing Period) : 2018/01/02 TO 2018/01/09

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 : 銀色金屬棒 (SILVER COLORED METAL BAR)

| 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), 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), 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                    | 12.4           |
| 汞 / Mercury (Hg)  | 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.          |
| 六價鉻 / Hexavalent Chromium<br>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.          |
| 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(2-乙基己基)酯 / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No. : 117-81-7) | 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.          |

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| 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          |
| 多溴聯苯總和 / Sum of PBBs             | mg/kg        | 參考IEC 62321-6 (2015), 以氣相層析/質譜儀<br>檢測. / With reference to IEC 62321-6<br>(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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### 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. (#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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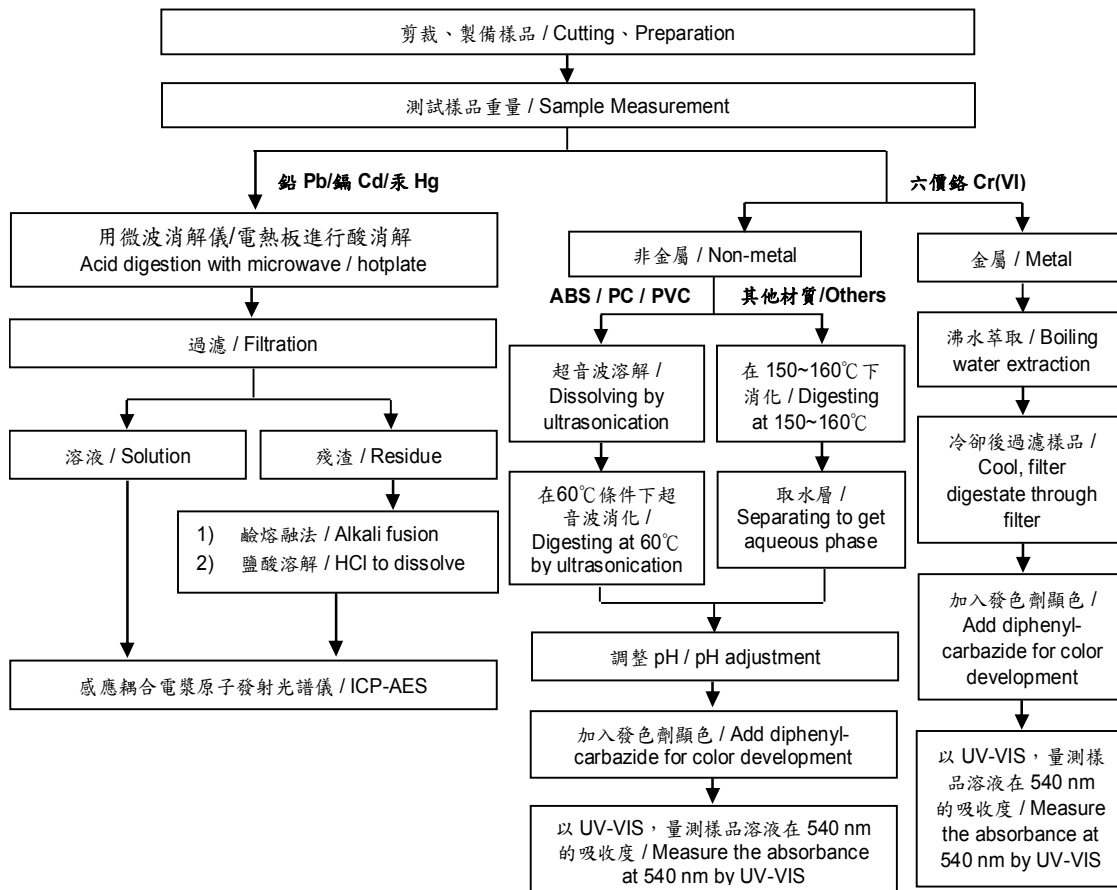


### 重金屬流程圖 / Analytical flow chart of Heavy Metal

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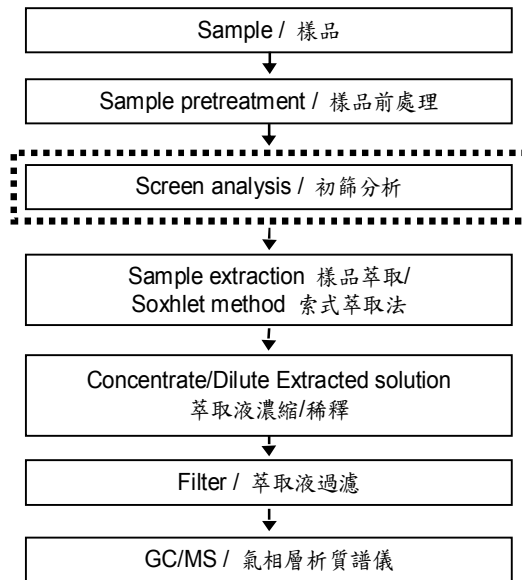
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### 多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBB/PBDE

- 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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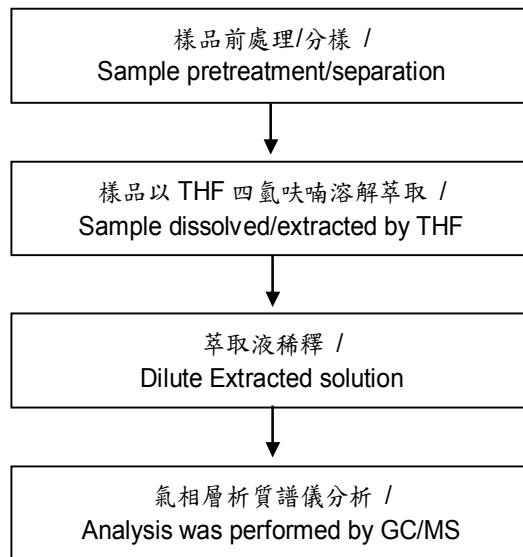
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### 可塑劑分析流程圖 / Analytical flow chart - Phthalate

- 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/2018/10085



\*\* 報告結尾 (End of Report) \*\*