

## 測試報告 Test Report

號碼(No.) : CE/2013/22022

日期(Date) : 2013/02/25

頁數(Page) : 1 of 7

燈冠塑膠工業股份有限公司

TENG KUAN PLASTICS INDUSTRY CO., LTD.

桃園縣龜山鄉民生北路一段54巷2弄17號

17, ALLEY 2, LANE 54, MIN SHENG N. RD., SECTION 1, KWEI SHAN DISTRICT, TAOYUAN,

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) : ALUMINUM FILM/BAG (鋁箔膜/袋)  
樣品型號(Style/Item No.) : AL-FB  
收件日期(Sample Receiving Date) : 2013/02/19  
測試期間(Testing Period) : 2013/02/19 TO 2013/02/25

=====  
測試需求(Test Requested) : (1) 依據客戶要求，參考RoHS 2011/65/EU Annex II 指令進行鎘，鉛，汞，六價鉻，多溴聯苯，多溴聯苯醚測試。(As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample.)  
(2) 依據客戶指定，進行鹵素-氟、氯、溴、碘測試。(As specified by client, to test Halogen-Fluorine, Chlorine, Bromine, Iodine contents in the submitted sample.)

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

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

結論(Conclusion) : 根據客戶所提供的樣品，其鎘，鉛，汞，六價鉻，多溴聯苯，多溴聯苯醚的測試結果符合RoHS指令2002/95/EC的更新指令2011/65/EU之要求 (Based on the performed tests on submitted samples, the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.)



Chenyu Kung / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory – Taipei

# 測試報告 Test Report

號碼(No.) : CE/2013/22022

日期(Date) : 2013/02/25

頁數(Page) : 2 of 7

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## 測試結果(Test Results)

測試部位(PART NAME) No.1 : 銀色鋁箔袋 (SILVER COLORED ALUMINUM BAG)

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)	法規 限值 (Limit)
				No.1	
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321: 2008方法, 以感應 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.	100
鉛 / Lead (Pb)	mg/kg	參考IEC 62321: 2008方法, 以感應 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.	1000
汞 / Mercury (Hg)	mg/kg	參考IEC 62321: 2008方法, 以感應 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.	1000
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.	1000
<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/2013/22022

日期(Date) : 2013/02/25

頁數(Page) : 3 of 7

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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)	法規 限值 (Limit)
				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/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.	1000
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			-	n.d.	1000
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.	-		

### 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/2013/22022

日期(Date) : 2013/02/25

頁數(Page) : 4 of 7

燈冠塑膠工業股份有限公司

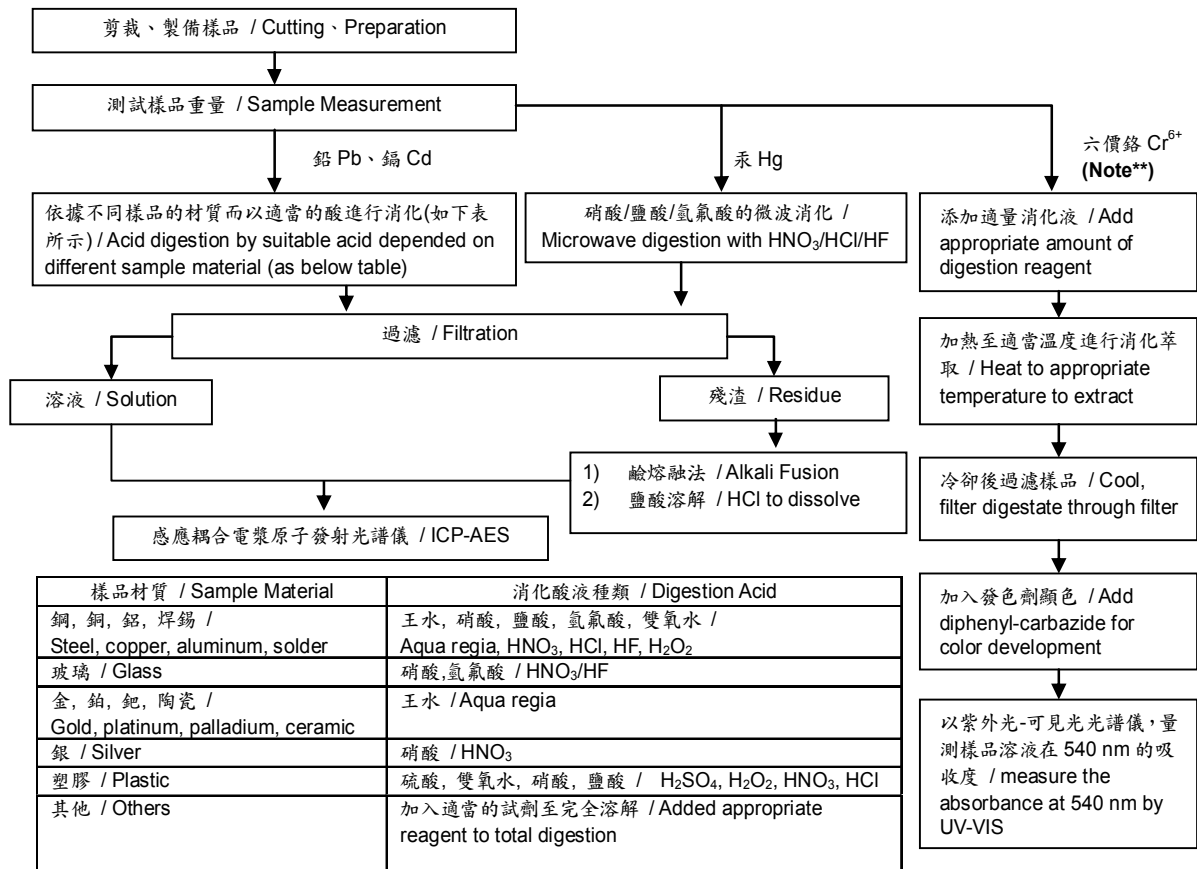
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 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/2013/22022

日期(Date) : 2013/02/25

頁數(Page) : 5 of 7

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

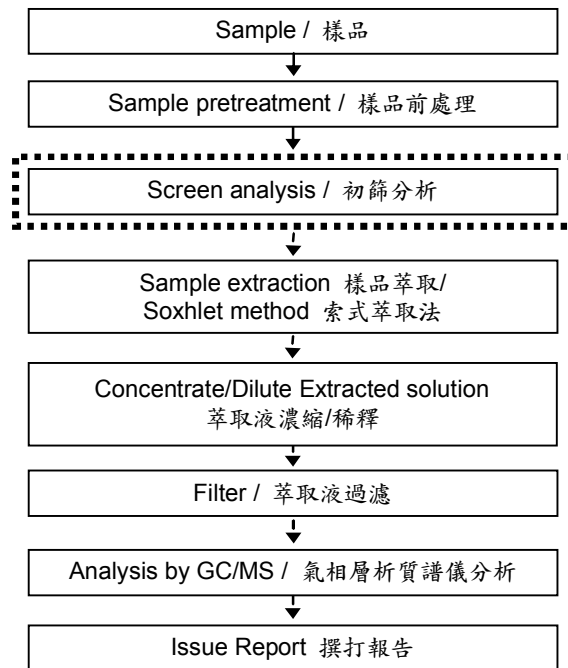
■ 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong

■ 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 - - ->



## 測試報告 Test Report

號碼(No.) : CE/2013/22022

日期(Date) : 2013/02/25

頁數(Page) : 6 of 7

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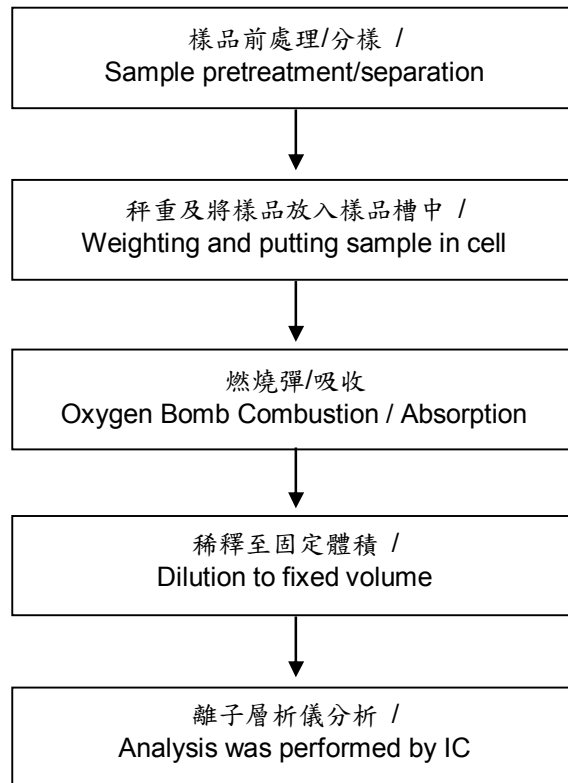
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TAIWAN, R. O. C.



### 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



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日期(Date) : 2013/02/25

頁數(Page) : 7 of 7

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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/2013/22022



\*\* 報告結尾(End of Report) \*\*