



天泰電機工業有限公司
深圳天泰電器元件有限公司
千力電子股份有限公司

台中縣梧棲鎮自強二街86巷61號
深圳市南山區白石洲中國原子能第二工業區二棟六樓
台中縣梧棲鎮港埠路一段627號

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：

樣品名稱：金屬化塑膠膜電容器
樣品型號：MEX/MEY/MEC/MPC/MEM/TCPS/PPC
其他：客戶：SONY/SAMSUNG/LG
收件日期：2008/04/16
測試期間：2008/04/16 TO 2008/04/22

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測試需求：參照 RoHS 2002/95/EC 及其修定指令要求

測試方法：
(1) 參考IEC 62321/2nd CDV (111/95/CDV)方法，用感應耦合電漿原子發射光譜儀(ICP-AES)檢測鎘含量。
(2) 參考IEC 62321/2nd CDV (111/95/CDV)方法，用感應耦合電漿原子發射光譜儀(ICP-AES)檢測鉛含量。
(3) 參考IEC 62321/2nd CDV (111/95/CDV)方法，用感應耦合電漿原子發射光譜儀(ICP-AES)檢測汞含量。
(4) 針對非金屬材質之樣品，參考IEC 62321/2nd CDV (111/95/CDV)方法，用UV-VIS檢測六價鉻含量。
(5) 針對金屬材質之樣品，參考IEC 62321/2nd CDV (111/95/CDV)方法檢測，用Spot test / boiling water extraction方法檢測六價鉻含量。
(6) 參考IEC 62321/2nd CDV (111/95/CDV)方法，以氣相層析儀/質譜儀(GC/MS)檢測多溴聯苯和多溴聯苯醚含量。

測試結果：請見下一頁。

何奇璘

報告簽署人 / 何奇璘 主任

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測試結果 (單位: mg/kg)

測試項目	測試方法 (請參考)	結果				方法偵測 極限值
		NO. 1	NO. 2	NO. 3	NO. 4	
鎘	(1)	n.d.	n.d.	n.d.	n.d.	2
鉛	(2)	n.d.	n.d.	8.19	n.d.	2
汞	(3)	n.d.	n.d.	n.d.	n.d.	2
六價鉻 (Alkaline extraction)	(4)	n.d.	n.d.	n.d.	---	2
六價鉻 (Spot test / boiling water extraction)	(5)	---	---	---	Negative	備註 5
多溴聯苯總和(PBBs)	(6)	n.d.	n.d.	n.d.	n.d.	-
一溴聯苯		n.d.	n.d.	n.d.	n.d.	5
二溴聯苯		n.d.	n.d.	n.d.	n.d.	5
三溴聯苯		n.d.	n.d.	n.d.	n.d.	5
四溴聯苯		n.d.	n.d.	n.d.	n.d.	5
五溴聯苯		n.d.	n.d.	n.d.	n.d.	5
六溴聯苯		n.d.	n.d.	n.d.	n.d.	5
七溴聯苯		n.d.	n.d.	n.d.	n.d.	5
八溴聯苯		n.d.	n.d.	n.d.	n.d.	5
九溴聯苯		n.d.	n.d.	n.d.	n.d.	5
十溴聯苯		n.d.	n.d.	n.d.	n.d.	5
多溴聯苯醚總和(PBDEs)(一至九溴) (備註 4)		n.d.	n.d.	n.d.	n.d.	-
一溴聯苯醚		n.d.	n.d.	n.d.	n.d.	5
二溴聯苯醚		n.d.	n.d.	n.d.	n.d.	5
三溴聯苯醚		n.d.	n.d.	n.d.	n.d.	5
四溴聯苯醚		n.d.	n.d.	n.d.	n.d.	5
五溴聯苯醚		n.d.	n.d.	n.d.	n.d.	5
六溴聯苯醚		n.d.	n.d.	n.d.	n.d.	5
七溴聯苯醚		n.d.	n.d.	n.d.	n.d.	5
八溴聯苯醚		n.d.	n.d.	n.d.	n.d.	5
九溴聯苯醚		n.d.	n.d.	n.d.	n.d.	5
十溴聯苯醚	n.d.	n.d.	n.d.	n.d.	5	
多溴聯苯醚總和(PBDEs)(一至十溴)	n.d.	n.d.	n.d.	n.d.	-	

測試部位描述:

- NO. 1 : 黃色塑膠
- NO. 2 : 銀色鋁箔
- NO. 3 : 黃色塑膠殼
- NO. 4 : 銀色金屬

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備註：1. mg/kg = ppm

2. n.d. = Not Detected / 未檢出

3. MDL = Method Detection Limit / 方法偵測極限值

4. 根據2005年10月13日歐盟會議公佈2005/717/EC，修訂2002/95/EC內容，通過解除
高分子材質中十溴聯苯醚之使用限制。

5. Spot-test:

Negative = 鍍層中偵測不到六價鉻, Positive = 鍍層中偵測到六價鉻;

當該測項無法確認時，測試樣品可藉由boiling-water-extraction測試方法進一步確認

Boiling-water-extraction:

Negative = 鍍層中偵測不到六價鉻, Positive = 鍍層中偵測到六價鉻;

該溶液濃度 ≥ 0.02 mg/kg with 50 cm^2 (sample surface area)

6. " - " = Not Regulated / 無規格值

7. " --- " = Not Conducted / 未測項目

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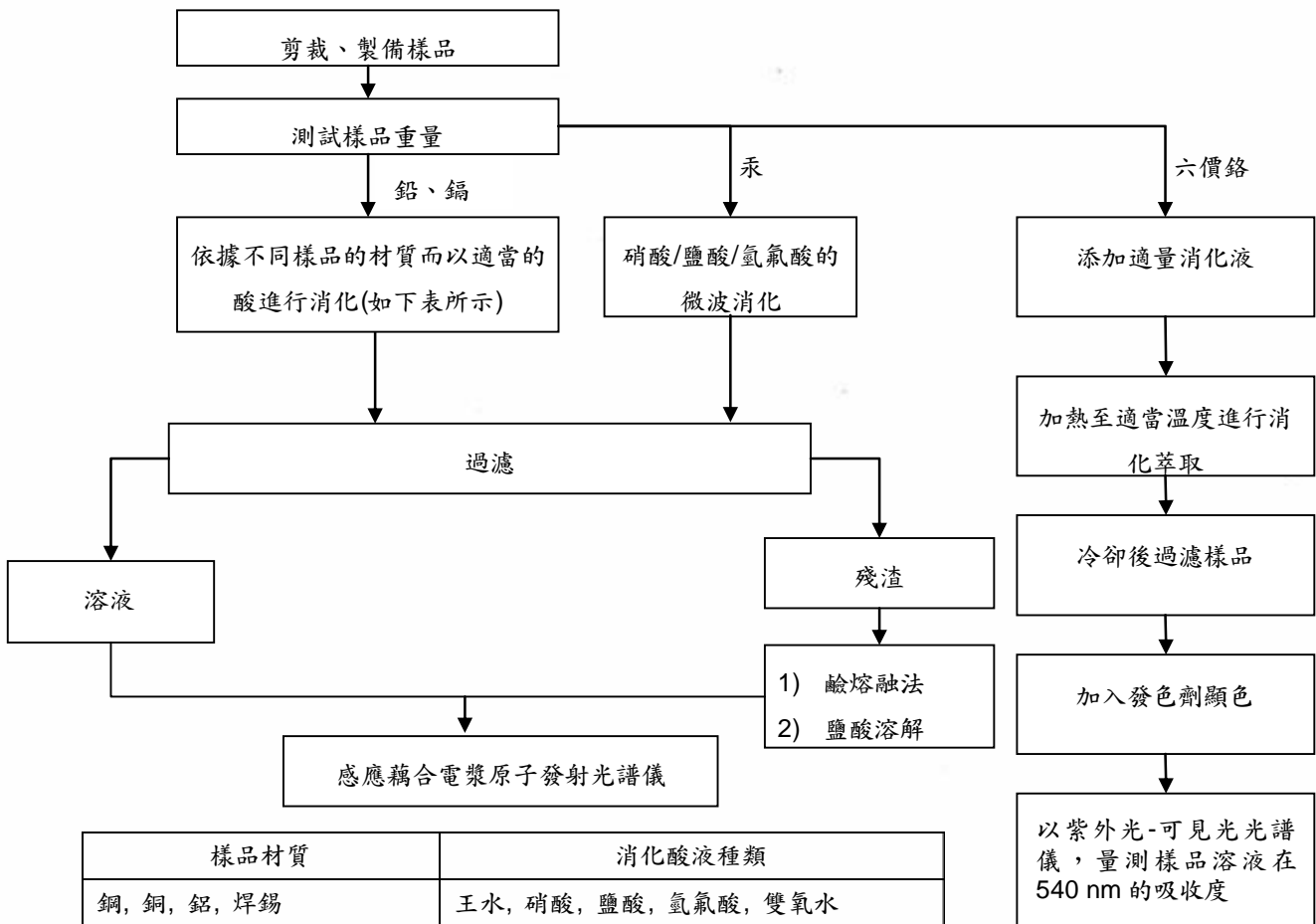
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外)
- 2) 測試人員：李宏明
- 3) 測試負責人：黃建智



樣品材質	消化酸液種類
銅, 銅, 鋁, 焊錫	王水, 硝酸, 鹽酸, 氫氟酸, 雙氧水
玻璃	硝酸, 氫氟酸
金, 鉑, 鈀, 陶瓷	王水
銀	硝酸
塑膠	硫酸, 雙氧水, 硝酸, 鹽酸
其他	加入任何酸至完全溶解

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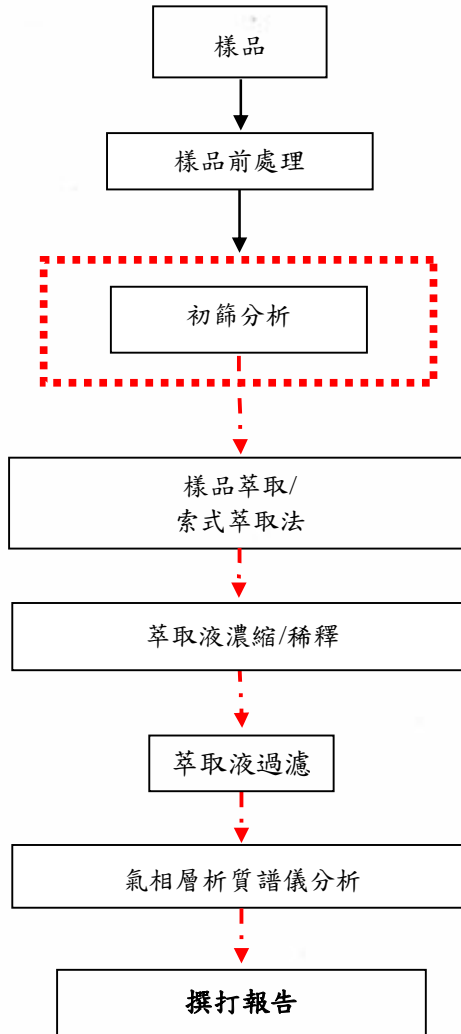


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多溴聯苯/多溴聯苯醚分析流程圖

初次測試程序 ———▶
 選擇性篩檢程序▶
 確認程序 - - - -▶



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** 報告結尾 **

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