

## 測試報告 TEST REPORT

MAYLOON ELECTRONIC CO., LTD.,  
NO.143, LANE 323, TA-LIAO ROAD,  
TA-LIAO HSIANG, KAOHSIUNG HSIEN,  
TAIWAN. R.O.C.

報告號碼 : KA/2007/A2022  
Report No.: KA/2007/A2022  
日期 : 2007/10/29  
Date : 2007/10/29  
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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 sample(s) was/were submitted and identified by/on behalf of the client as :**

樣品名稱/Sample : LEAD FREE THICK FILM CHIP RESISTORS  
樣品型號/Style/Item No. : CR 1206  
樣品顏色/Color : 灰色+黑色/GREY+BLACK  
收件日期 (Sample Received) : 2007/10/22  
測試期間 (Testing Period) : 2007/10/22 TO 2007/10/29

**測試結果 / Test Result(s) : - 請見下一頁 / Please see the next page(s) -**

  
Katherine Ho / Supervisor  
Signed for and on behalf of  
SGS Taiwan Limited

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### 測試結果 / Test Result(s)

測試部位 NO.1/PART NAME NO.1 : LEAD FREE THICK FILM CHIP RESISTORS

測試項目 Test Item(s)	單位 Unit	測試方法 Method	方法偵測 極限值 MDL	結果 Result
				No. 1
六價鉻 (Alkaline extraction) / Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	參考 IEC 62321 Ed. 1 (111/54/CDV)方法, 用UV-VIS檢測 六價鉻含量。 / With reference	2	n.d.
鎘 / Cadmium (Cd)	mg/kg	用感應耦合電漿原子發射光譜儀 (ICP-AES)檢測鎘含量。 / Determination of Cadmium by ICP-AES.	2	n.d.
汞/Mercury (Hg)	mg/kg	參考IEC 62321 Ed. 1 (111/54/CDV)方法, 用感應耦合電 漿原子發射光譜儀(ICP-AES)檢測 汞含量./With reference to IEC 62321, ED.1 (111/54/CDV).	2	n.d.
鉛/Lead (Pb)	mg/kg	用感應耦合電漿原子發射光譜儀 (ICP-AES)檢測鉛含量。 / Determination of Lead by ICP- AES.	2	603

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測試項目 Test Item(s)	單位 Unit	測試方法 Method	方法偵測 極限值 MDL	結果 Result No. 1
多溴聯苯總和(PBBs)/Sum of PBBs	mg/kg	參考IEC 62321 Ed. 1 (111/54/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。/With reference to IEC 62321, ED.1 (111/54/CDV). Determination of PBBs and PBDEs 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.

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測試項目 Test Item(s)	單位 Unit	測試方法 Method	方法偵測 極限值 MDL	結果 Result No. 1
多溴聯苯醚總和(PBDEs)(一至九溴) (備註 4) / Sum of PBDEs (Mono to Nona)(Note 4)	mg/kg	參考 IEC 62321 Ed. 1 (111/54/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./With reference to IEC 62321, ED.1 (111/54/CDV). Determination of PBBs and PBDEs by GC/MS.	-	n.d.
一溴聯苯醚 / Monobromobiphenyl ether			5	n.d.
二溴聯苯醚 / Dibromobiphenyl ether			5	n.d.
三溴聯苯醚 / Tribromobiphenyl ether			5	n.d.
四溴聯苯醚 / Tetrabromobiphenyl ether			5	n.d.
五溴聯苯醚 / Pentabromobiphenyl ether			5	n.d.
六溴聯苯醚 / Hexabromobiphenyl ether			5	n.d.
七溴聯苯醚 / Heptabromobiphenyl ether			5	n.d.
八溴聯苯醚 / Octabromobiphenyl ether			5	n.d.
九溴聯苯醚 / Nonabromobiphenyl ether			5	n.d.
十溴聯苯醚 / Decabromobiphenyl ether			5	n.d.
多溴聯苯醚總和(PBDEs)(一至十溴) / Sum of PBDEs (Mono to Deca)			-	n.d.

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測試項目 Test Item(s)	單位 Unit	測試方法 Method	方法偵測 極限值 MDL	結果 Result
				No. 1
鹵素(氯, 氣, 溴, 碘) 含量	---	鹵素定量分析	---	---
鹵素(氯)(CAS NO. 007782-50-5) / Halogen-Chlorine (Cl) (CAS No:007782-50-5)	mg/kg	參考BS EN 14582附錄A, 以離子層 析儀分析氯, 氣, 溴, 碘含量。/ With reference to BS EN 14582	50	n.d.
鹵素(氟)(CAS NO. 007782-41-4) / Halogen-Fluorine (F) (CAS No:007782-41-4)	mg/kg	參考BS EN 14582附錄A, 以離子層 析儀分析氯, 氣, 溴, 碘含量。/ With reference to BS EN 14582	50	n.d.
鹵素(溴)(CAS NO. 007726-95-6) / Halogen-Bromine (Br) (CAS No:007726-95-6)	mg/kg	參考BS EN 14582附錄A, 以離子層 析儀分析氯, 氣, 溴, 碘含量。/ With reference to BS EN 14582	50	n.d.
鹵素(碘)(CAS NO. 007553-56-2) / Halogen-Iodine (I) (CAS No:007553-56-2)	mg/kg	參考BS EN 14582附錄A, 以離子層 析儀分析氯, 氣, 溴, 碘含量。/ With reference to BS EN 14582	50	n.d.

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。 /

According to 2005/717/EC DecaBDE is exempt.

5. " - " = Not Regulated / 無規格值

6. " --- " = Not Conducted / 未測項目

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TW5727095

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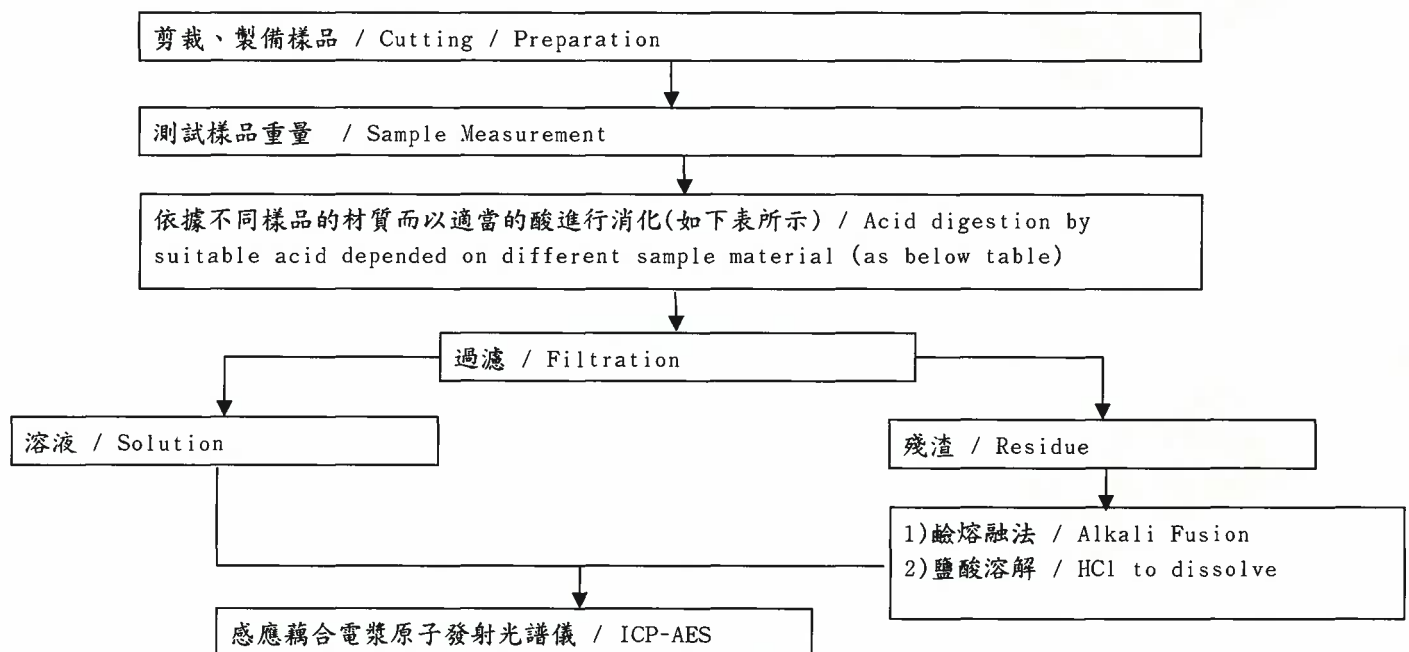


1) 根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.

2) 測試人員：李宏明 / Name of the person who made measurement: Hungming Li

3) 測試負責人：黃建智 / Name of the person in charge of measurement: George Huang

### 鎘、鉛的消化流程圖 / Method 1: Flow Chart of Digestion for Cd、Pb analysis



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, 鈀, 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 加入任何酸至完全溶解 / Any acid to total digestion

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