

測試報告

Test Report

號碼(No.) : CV/2018/B0083

日期(Date) : 2018/11/28

頁數(Page): 1 of 8


ISOLA GROUP



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) :

樣品名稱(Sample Description) : PREPREG
樣品型號(Style/Item No.) : ASTRA MT77
收件日期(Sample Receiving Date) : 2018/11/14
測試期間(Testing Period) : 2018/11/14 TO 2018/11/28

=====
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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測試報告

Test Report

號碼(No.) : CV/2018/B0083

日期(Date) : 2018/11/28

頁數(Page): 2 of 8

ISOLA GROUP



測試結果(Test Results)

測試部位(PART NAME)No.1 : 黃色片狀 (YELLOW SHEET)

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
四溴雙酚-A / Tetrabromobisphenol A (TBBP-A) (CAS No. : 79-94-7)	mg/kg	參考Global SOP RSTS-E&E-121 (2012) ，以液相層析儀/質譜儀分析。 / With reference to Global SOP RSTS-E&E- 121 (2012). Analysis was performed by LC/MS.	10	n. d.
雙酚 A / Bisphenol A (CAS No. : 80- 05-7)	mg/kg	參考RSTS-CHEM-239-1 (2016)，以超高 效能液相層析串聯質譜儀檢測。 / With reference to RSTS-CHEM-239-1 (2016). Analysis was performed by UPLC-MSMS.	1	n. d.
總揮發性有機物質 / Total Volatile Organic Compounds (TVOC)	mg/kg	以頂空氣體進樣裝置，連接氣相層析儀 /質譜儀檢測。 / Analysis was performed by Headspace linked GC/MS. (測試條件 / Test Condition: 90°C, 30 mins)	1	6.07
銻 / Antimony (Sb)	mg/kg	參考US EPA 3052 (1996)，以感應耦合 電漿原子發射光譜儀檢測。 / With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.	2	n. d.
砷 / Arsenic (As)	mg/kg	參考US EPA 3052 (1996)，以感應耦合 電漿原子發射光譜儀檢測。 / With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.	2	n. d.
鎳 / Nickel (Ni)	mg/kg	參考US EPA 3052 (1996)，以感應耦合 電漿原子發射光譜儀檢測。 / With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.	2	2.71

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測試報告

Test Report

號碼(No.) : CV/2018/B0083

日期(Date) : 2018/11/28

頁數(Page): 3 of 8

ISOLA GROUP



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
磷 / Phosphorus (P)	mg/kg	參考US EPA 3052 (1996), 以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.	2	50.1
鹵素 / Halogen				
鹵素 (氟) / Halogen-Fluorine (F) (CAS No. : 14762-94-8)	mg/kg	參考BS EN 14582 (2016), 以離子層析儀分析. / With reference to BS EN 14582 (2016). Analysis was performed by IC.	50	n. d.
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No. : 22537-15-1)	mg/kg		50	n. d.
鹵素 (溴) / Halogen-Bromine (Br) (CAS No. : 10097-32-2)	mg/kg		50	119000
鹵素 (碘) / Halogen-Iodine (I) (CAS No. : 14362-44-8)	mg/kg		50	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)

測試報告 Test Report

ISOLA GROUP

號碼(No.) : CV/2018/B0083

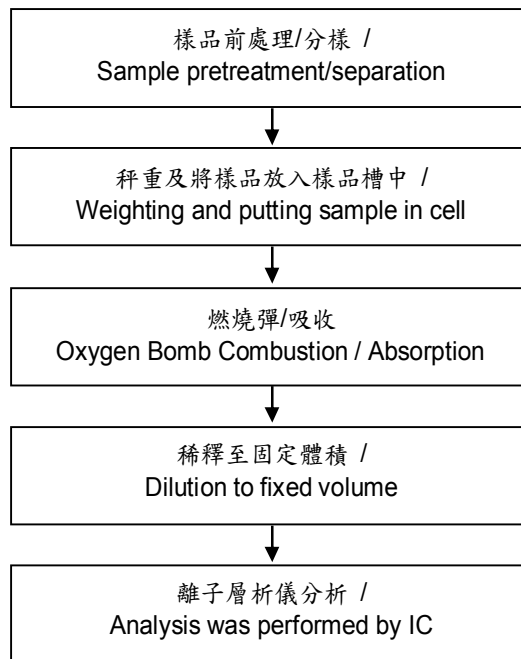
日期(Date) : 2018/11/28

頁數(Page): 4 of 8



鹵素分析流程圖 / Analytical flow chart - Halogen

- 測試人員：陳恩臻 / Technician: Rita Chen
- 測試負責人：張啟興 / Supervisor: Troy Chang



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測試報告 Test Report

ISOLA GROUP

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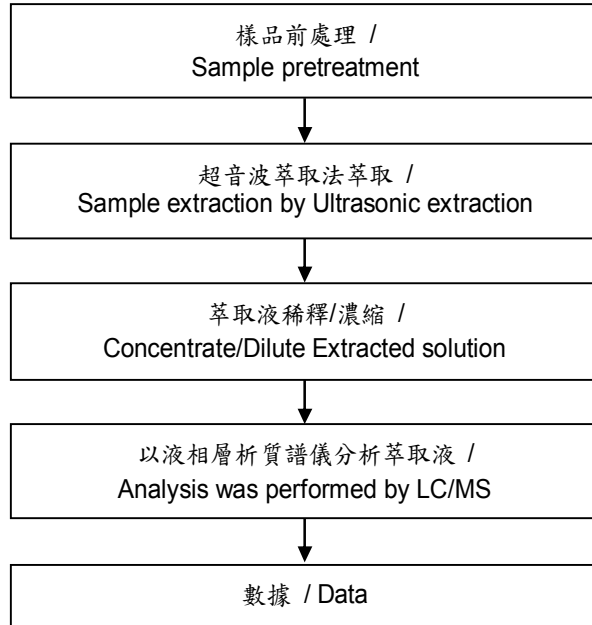
日期(Date) : 2018/11/28

頁數(Page): 5 of 8



四溴雙酚-A 分析流程圖 / Analytical flow chart - TBBP-A

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang



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測試報告 Test Report

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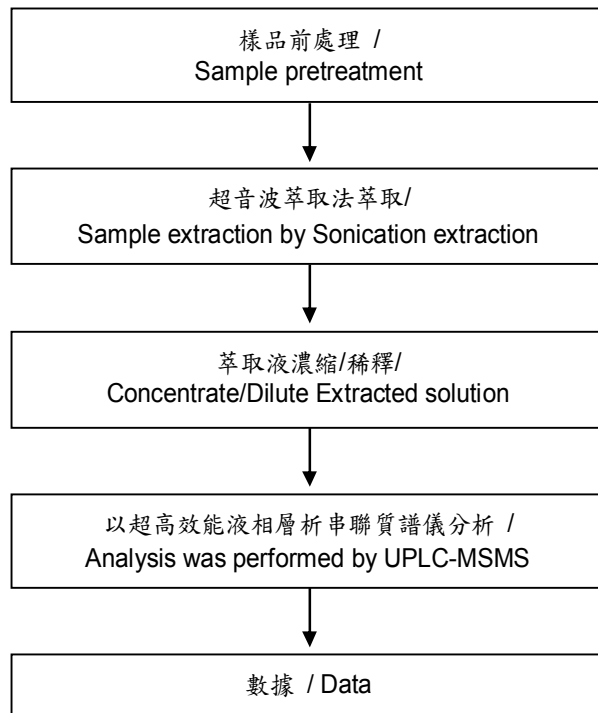
日期(Date) : 2018/11/28

頁數(Page): 6 of 8



雙酚A分析流程圖 / Analytical flow chart - Bisphenol A

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang



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測試報告 Test Report

號碼(No.) : CV/2018/B0083

日期(Date) : 2018/11/28

頁數(Page): 7 of 8

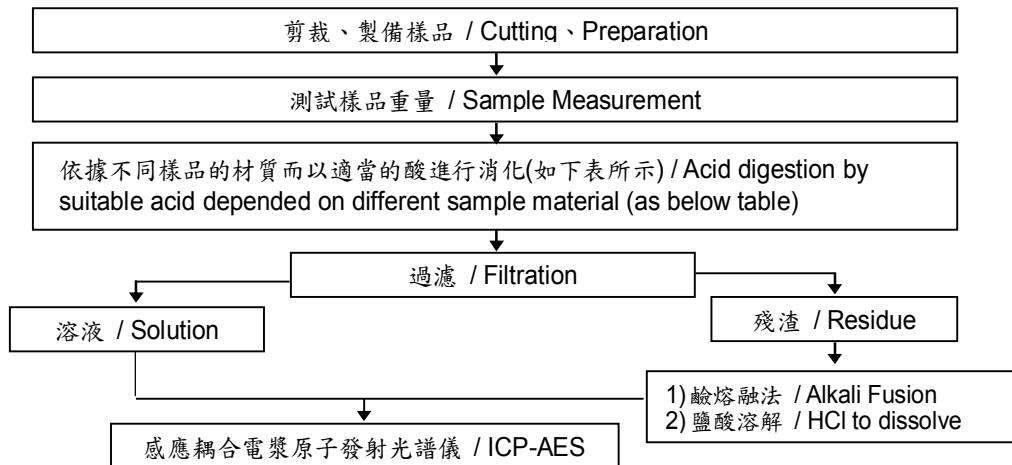
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根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.

- 測試人員：陳恩臻 / Technician: Rita Chen
- 測試負責人：張啟興 / Supervisor: Troy Chang

元素以 ICP-AES 分析的消化流程圖 (Flow Chart of digestion for the elements analysis performed by ICP-AES)



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 / Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂
玻璃 / Glass	硝酸,氫氟酸 / HNO ₃ /HF
金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO ₃
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion

測試報告 Test Report

ISOLA GROUP

號碼(No.) : CV/2018/B0083

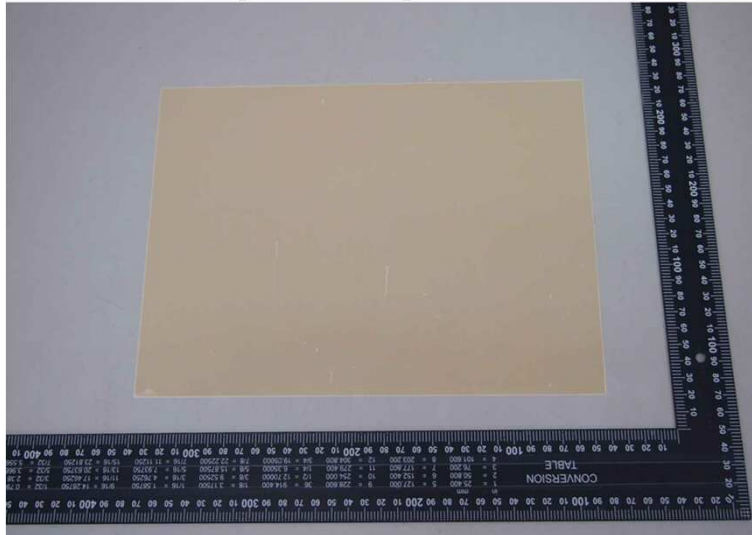
日期(Date) : 2018/11/28

頁數(Page): 8 of 8



* 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.)

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** 報告結尾 (End of Report) **

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