



測試報告

Test Report

號碼(No.): ETA21A00156

日期(Date): 25-Oct-2021

頁數(Page): 1 of 11

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 Name) : LAMINATE

樣品型號(Style/Item No.) : FR405

收件日(Sample Receiving Date) : 14-Oct-2021

測試期間(Testing Period) : 14-Oct-2021 to 25-Oct-2021

測試需求(Test Requested) : 依據客戶要求進行測試。測試項目請參閱測試結果表格。(Testing item(s) is/are specified by client. Please refer to result table for testing item(s).)

測試結果(Test Results) : 請參閱下一頁 (Please refer to following pages.)

Troy Chang, Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei



PIN CODE: C2041CFB

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測試部位敘述 (Test Part Description)

No.1 : 銅色片狀 (COPPER COLORED SHEET)

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-8)	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.)	mg/kg	50	322
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1)		mg/kg	50	177
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)		mg/kg	50	23600
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)		mg/kg	50	n.d.
全氟辛烷磺酸及其鹽類 (PFOS and its salts) (CAS No.: 1763-23-1 and its salts)	參考US EPA 3550C: 2007 · 以液相層析儀/質譜儀分析。 (With reference to US EPA 3550C: 2007, analysis was performed by LC/MS.)	mg/kg	10	n.d.
全氟辛酸及其鹽類 (PFOA and its salts) (CAS No.: 335-67-1 and its salts)		mg/kg	10	n.d.
四溴雙酚-A (TBBP-A) (Tetrabromobisphenol A (TBBP-A)) (CAS No.: 79-94-7)	參考RSTS-E&E-121 · 以液相層析儀/質譜儀分析。 (With reference to RSTS-E&E-121, analysis was performed by LC/MS.)	mg/kg	10	n.d.
雙酚A (Bisphenol A) (CAS No.: 80-05-7)	參考RSTS-CHEM-239-1 · 以液相層析串聯質譜儀分析。 (With reference to RSTS-CHEM-239-1, analysis was performed by LC/MS/MS.)	mg/kg	1	n.d.
有機錫 (Organic-tin compounds)				
三丁基錫 (TBT) (Tributyl tin (TBT))	參考ISO 17353: 2004 · 以氣相層析儀/火焰光度偵測器分析。 (With reference to ISO 17353: 2004, analysis was performed by GC/FPD.)	mg/kg	0.03	n.d.
三苯基錫 (TPT) (Triphenyl tin (TPT))		mg/kg	0.03	n.d.
二丁基錫 (DBT) (Dibutyl tin (DBT))		mg/kg	0.03	n.d.
二辛基錫 (DOT) (Dioctyl tin (DOT))		mg/kg	0.03	n.d.
氧化雙三丁基錫 (TBTO) (Bis(tributyltin) oxide (TBTO)) (CAS No.: 56-35-9)	由三丁基錫測試結果計算得之。 (Calculated from the result of Tributyl Tin (TBT).)	mg/kg	0.03▲	n.d.
聚氯乙烯 (Polyvinyl chloride) (PVC)	參考ASTM E1252: 2013 · 以傅立葉轉換紅外線光譜儀及焰色法分析。 (With reference to ASTM E1252: 2013, analysis was performed by FT-IR and Flame Test.)	**	-	Negative

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測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
錫 (Sn) (Tin (Sn)) (CAS No.: 7440-31-5)	參考US EPA 3052: 1996 · 以感應耦合電漿發射光譜儀分析。(With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.)	mg/kg	2	n.d.
銻 (Sb) (Antimony (Sb)) (CAS No.: 7440-36-0)		mg/kg	2	n.d.
磷 (P) (Phosphorus (P)) (CAS No.: 7723-14-0)		mg/kg	2	23.9
鎳 (Ni) (Nickel (Ni)) (CAS No.: 7440-02-0)		mg/kg	2	107
鈹 (Be) (Beryllium (Be)) (CAS No.: 7440-41-7)		mg/kg	2	n.d.
砷 (As) (Arsenic (As)) (CAS No.: 7440-38-2)		mg/kg	2	n.d.

備註(Note) :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n.d. = Not Detected (未檢出) ; 小於MDL / Less than MDL
4. "-" = Not Regulated (無規格值)
5. **= Qualitative analysis (No Unit) 定性分析(無單位)
6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
7. 全氟辛烷磺酸及其鹽類包含 (PFOS and its salts including) :
CAS No.: 29081-56-9, 2795-39-3, 29457-72-5, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7.
8. 全氟辛酸及其鹽類包含 (PFOA and its salts including) :
CAS No.: 3825-26-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0.
9. ▲ : MDL是針對元素/測試化合物之評估。(The MDL was evaluated for element / tested substance.)
換算公式 (Conversion Formula) : $AX = A \times F$

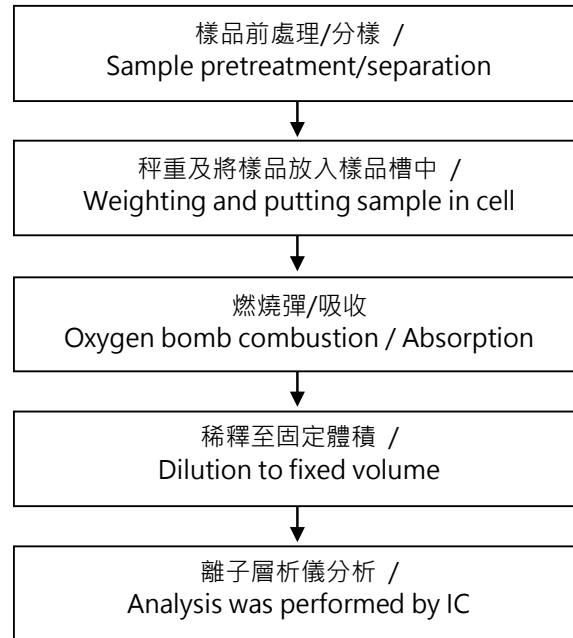
AX	A	F
氧化雙三丁基錫 (Bis(tributyltin)oxide) (TBTO)	三丁基錫 (Tributyl Tin) (TBT)	1.024

參數換算表 (Parameter Conversion Table) :

https://eecloud.sgs.com/Region_TW/DocDownload.aspx#otherDoc

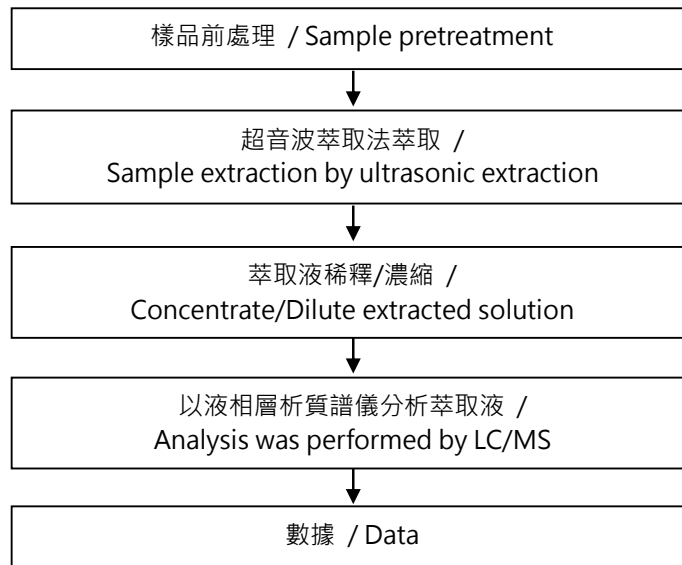
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鹵素分析流程圖 / Analytical flow chart - Halogen



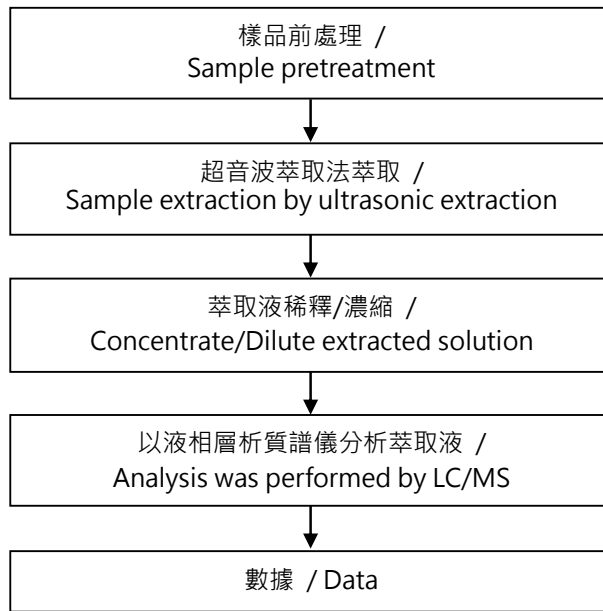
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全氟辛酸/全氟辛烷磺酸分析流程圖 / Analytical flow chart - PFOA/PFOS



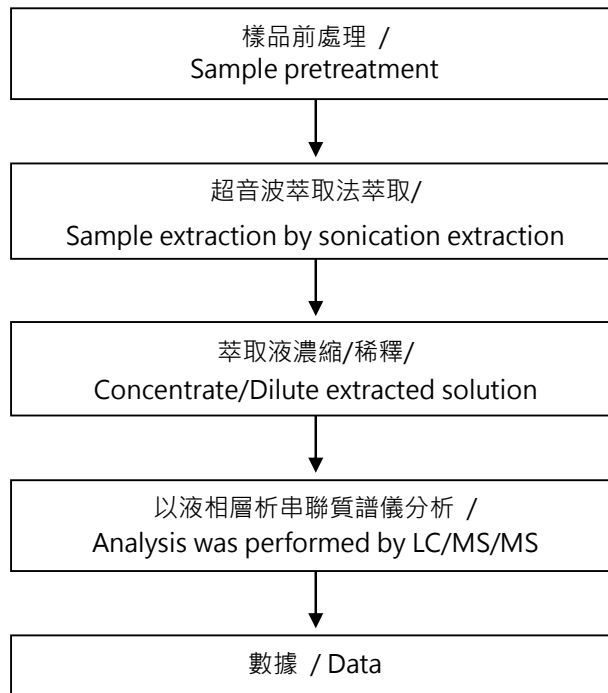
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四溴雙酚-A 分析流程圖 / Analytical flow chart - TBBP-A



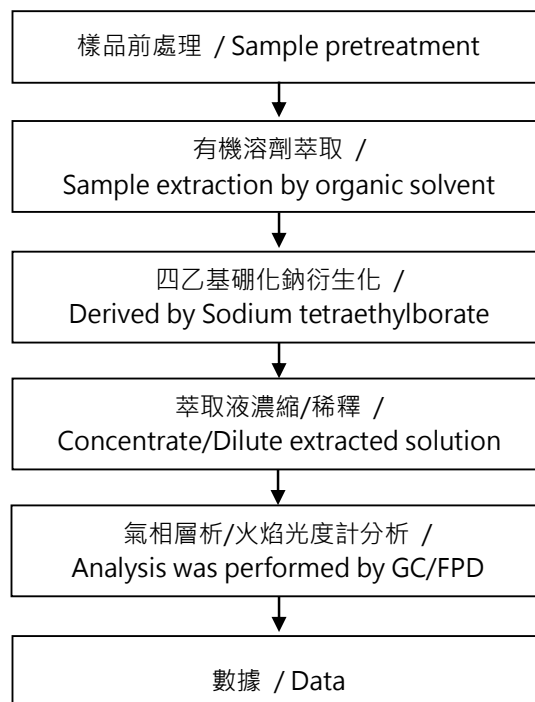
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雙酚A分析流程圖 / Analytical flow chart - Bisphenol A



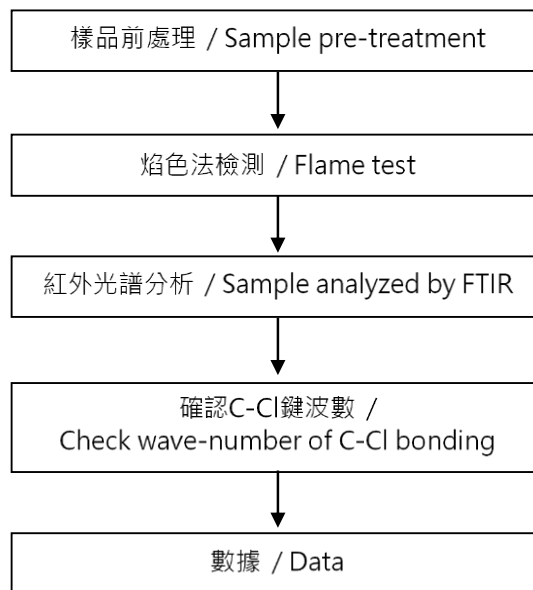
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有機錫分析流程圖 / Analytical flow chart - Organic-Tin



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聚氯乙烯物質判定分析流程圖 / Analysis flow chart - PVC



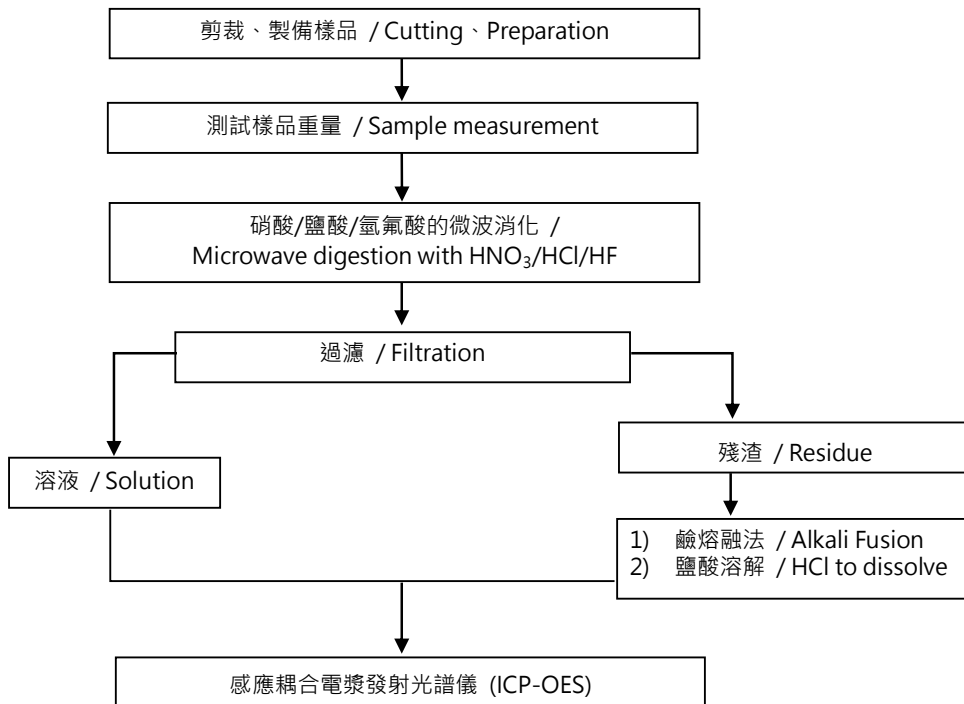
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元素(含重金屬)分析流程圖 / Analytical flow chart of Elements (Heavy metal included)

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.

【參考方法/Reference method : US EPA 3051A、US EPA 3052】



* US EPA 3051A 方法未添加氫氟酸 / US EPA 3051A method does not add HF.

* 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.)

ETA21A00156



** 報告結尾 (End of Report) **

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