

Test Report

號碼(No.): ETR23A05462

日期(Date): 07-Nov-2023

頁數(Page): 1 of 16

安碁科技股份有限公司 (AKER TECHNOLOGY CO., LTD.)

台中市潭子區建國路11之3號 (NO. 11-3, JIANGUO RD., TANZI DIST., TAICHUNG CITY 427, TAIWAN)

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 the applicant as):

樣品名稱(Sample Name) : 49 CRYSTAL

收件日(Sample Receiving Date) : 31-Oct-2023

測試期間(Testing Period) : 31-Oct-2023 to 07-Nov-2023

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.)





PIN CODE: 78349A9I



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測試部位敘述 (Test Part Description)

No.1 : 整體混測 (MIXED ALL PARTS)

測試結果 (Test Results)

測試項目	測試方法	單位	MDL	結果
(Test Items)	(Method)	(Unit)		(Result)
				No.1
鎘 (Cd) (Cadmium (Cd))	参考IEC 62321-5: 2013,以感應耦合電漿發	mg/kg	2	n.d.
	射光譜儀分析。(With reference to IEC			
	62321-5: 2013, analysis was performed by			
	ICP-OES.)			
鉛 (Pb) (Lead (Pb))	参考IEC 62321-5: 2013,以感應耦合電漿發	mg/kg	2	n.d.
	射光譜儀分析。(With reference to IEC			
	62321-5: 2013, analysis was performed by			
	ICP-OES.)			
汞 (Hg) (Mercury (Hg))	參考IEC 62321-4: 2013+ AMD1: 2017·以感應	mg/kg	2	n.d.
	耦合電漿發射光譜儀分析。(With reference to			
	IEC 62321-4: 2013+ AMD1: 2017, analysis			
\ \(\tag{\tag{\tag{\tag{\tag{\tag{\tag{	was performed by ICP-OES.)			
六價鉻 Cr(VI) (Hexavalent Chromium	參考IEC 62321-7-2: 2017 · 以紫外光-可見光	mg/kg	8	n.d.
Cr(VI))	分光光度計分析。(With reference to IEC			
	62321-7-2: 2017, analysis was performed			
\h_ \mathred ++ \land \hat{A} = \text{a} = \text{a} = \text{a} = \text{a} = \text{b}	by UV-VIS.)	4		1
一溴聯苯 (Monobromobiphenyl)	-	mg/kg	5	n.d.
二溴聯苯 (Dibromobiphenyl)	-	mg/kg	5	n.d.
三溴聯苯 (Tribromobiphenyl)	-	mg/kg	5	n.d.
四溴聯苯 (Tetrabromobiphenyl)		mg/kg	5	n.d.
五溴聯苯 (Pentabromobiphenyl)	参考IEC 62321-6: 2015 · 以氣相層析儀/質譜	mg/kg	5	n.d.
六溴聯苯 (Hexabromobiphenyl)	儀分析。(With reference to IEC 62321-6:	mg/kg	5	n.d.
七溴聯苯 (Heptabromobiphenyl)	2015, analysis was performed by GC/MS.)	mg/kg	5	n.d.
八溴聯苯 (Octabromobiphenyl)]	mg/kg	5	n.d.
九溴聯苯 (Nonabromobiphenyl)]	mg/kg	5	n.d.
十溴聯苯 (Decabromobiphenyl)]	mg/kg	5	n.d.
多溴聯苯總和 (Sum of PBBs)		mg/kg	-	n.d.



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測試項目	測試方法	單位	MDL	結果
(Test Items)	(Method)	(Unit)		(Result)
				No.1
一溴聯苯醚 (Monobromodiphenyl ether)		mg/kg	5	n.d.
二溴聯苯醚 (Dibromodiphenyl ether)		mg/kg	5	n.d.
三溴聯苯醚 (Tribromodiphenyl ether)		mg/kg	5	n.d.
四溴聯苯醚 (Tetrabromodiphenyl ether)		mg/kg	5	n.d.
五溴聯苯醚 (Pentabromodiphenyl ether)	参考IEC 62321-6: 2015·以氣相層析儀/質譜	mg/kg	5	n.d.
六溴聯苯醚 (Hexabromodiphenyl ether)	儀分析。(With reference to IEC 62321-6:	mg/kg	5	n.d.
七溴聯苯醚 (Heptabromodiphenyl ether)	2015, analysis was performed by GC/MS.)	mg/kg	5	n.d.
八溴聯苯醚 (Octabromodiphenyl ether)		mg/kg	5	n.d.
九溴聯苯醚 (Nonabromodiphenyl ether)		mg/kg	5	n.d.
十溴聯苯醚 (Decabromodiphenyl ether)		mg/kg	5	n.d.
多溴聯苯醚總和 (Sum of PBDEs)		mg/kg	-	n.d.
郷苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl	參考IEC 62321-8: 2017·以氣相層析儀/質譜 儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.
phthalate (BBP)) 鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP))		mg/kg	50	n.d.
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di- (2-ethylhexyl) phthalate (DEHP))		mg/kg	50	n.d.
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))		mg/kg	50	n.d.
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-8)		mg/kg	50	n.d.
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537- 15-1)	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	n.d.
溴 (Br) (Bromine (Br)) (CAS No.: 10097- 32-2)		mg/kg	50	n.d.
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)		mg/kg	50	n.d.
中鏈氯化石蠟(C14-C17) (MCCP) (Medium Chain Chlorinated Paraffins(C14-C17) (MCCP)) (CAS No.: 85535-85-9)	參考ISO 18219-2: 2021·以氣相層析儀/質譜儀分析。(With reference to ISO 18219-2: 2021, analysis was performed by GC/MS.)	mg/kg	50	n.d.



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測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1
多環芳香烴 (Polycyclic Aromatic				
Hydrocarbons) (PAHs)				
苯駢(a)芘 (Benzo[a]pyrene) (CAS No.: 50-32-8)		mg/kg	0.2	n.d.
苯駢(e)芘 (Benzo[e]pyrene) (CAS No.: 192-97-2)		mg/kg	0.2	n.d.
苯駢蒽 (Benzo[a]anthracene) (CAS No.: 56-55-3)		mg/kg	0.2	n.d.
苯(b)苯駢芴 (Benzo[b]fluoranthene) (CAS No.: 205-99-2)		mg/kg	0.2	n.d.
苯(j)苯駢芴 (Benzo[j]fluoranthene) (CAS No.: 205-82-3)		mg/kg	0.2	n.d.
苯(k)苯駢芴 (Benzo[k]fluoranthene) (CAS No.: 207-08-9)	 参考AfPS GS 2019:01 PAK・以氣相層析儀/	mg/kg	0.2	n.d.
蒀 (Chrysene) (CAS No.: 218-01-9)	質譜儀分析。(With reference to AfPS GS	mg/kg	0.2	n.d.
二苯駢蒽 (Dibenzo[a,h]anthracene) (CAS No.: 53-70-3)	2019:01 PAK, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.
苯駢芘 (Benzo[g,h,i]perylene) (CAS No.: 191-24-2)		mg/kg	0.2	n.d.
茚酮芘 (Indeno[1,2,3-c,d]pyrene) (CAS No.: 193-39-5)		mg/kg	0.2	n.d.
蒽 (Anthracene) (CAS No.: 120-12-7)		mg/kg	0.2	n.d.
苯駢芴 (Fluoranthene) (CAS No.: 206- 44-0)		mg/kg	0.2	n.d.
菲 (Phenanthrene) (CAS No.: 85-01-8)		mg/kg	0.2	n.d.
芘 (Pyrene) (CAS No.: 129-00-0)		mg/kg	0.2	n.d.
萘 (Naphthalene) (CAS No.: 91-20-3)		mg/kg	0.2	n.d.
多環芳香烴15項總和 (Sum of 15 PAHs)		mg/kg	-	n.d.



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測試項目	測試方法	單位	MDL	結果
(Test Items)	(Method)	(Unit)		(Result)
				No.1
四溴雙酚-A (TBBP-A)	參考RSTS-E&E-121,以液相層析儀/質譜儀	mg/kg	10	n.d.
(Tetrabromobisphenol A (TBBP-A))	分析。(With reference to RSTS-E&E-121,			
(CAS No.: 79-94-7)	analysis was performed by LC/MS.)			
全氟辛烷磺酸及其鹽類 (PFOS and its	參考CEN/TS 15968: 2010 · 以液相層析串聯	mg/kg	0.01	n.d.
salts) (CAS No.: 1763-23-1 and its salts)	質譜儀分析。(With reference to CEN/TS			
	15968: 2010, analysis was performed by			
	LC/MS/MS.)			
全氟辛酸及其鹽類 (PFOA and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯	mg/kg	0.01	n.d.
(CAS No.: 335-67-1 and its salts)	質譜儀分析。(With reference to CEN/TS			
	15968: 2010, analysis was performed by			
	LC/MS/MS.)			

備註(Note):

- 1. mg/kg = ppm; 0.1wt% = 0.1% = 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. 樣品的測試是基於申請人要求混合測試‧報告中的混合測試結果不代表其中個別單一材質的含量。
 The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value.



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PFAS Remark:

現有PFAS定量技術是分析PFAS物質的特定結構,但同碳數族群之PFAS酸及鹽類物質,其可被辨識的特定結構相同,因此無法區別所分析的特定結構是來自酸或者鹽類,故測試結果為同碳數族群之PFAS之酸及鹽類物質的濃度總合。下表PFAS物質濃度皆已包含在測試結果中,相關資訊請參見下表:(下表列舉PFAS物質僅為範例,並不包含所有同碳數族群之PFAS鹽類。) (The quantitative technology of PFAS is to analyze the specific structure of PFAS substances. However, PFAS acid and its salts with the same carbon number group have the same specific structure that can be identified. The tested results of the analyzed specific structure cannot be distinguished to identify the contribution from PFAS acid or its salts. Therefore, the tested results display the sum of concentrations of PFAS acids and its salts with the same carbon number group. The concentration of PFAS substances in the below table have been included in the tested results, please refer to the table for relevant information: (The listed PFAS substances are examples only, it do not include all PFAS salts with the same carbon number group.))

物質濃度分類 (Classification of Substance Concentration)	物質名稱 (Substance Name)	CAS No.
全氟辛烷磺酸及其鹽類 Perfluorooctane sulfonates and its	全氟辛基磺酸鉀 (PFOS-K) Potassium perfluorooctanesulfonate (PFOS-K)	2795-39-3
salts (PFOS and its salts) (CAS No.: 1763-23-1 and its salts)	全氟辛基磺酸鋰 (PFOS-Li) Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	29457-72-5
	全氟辛基磺酸銨 (PFOS-NH ₄) Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH ₄)	29081-56-9
	全氟辛基磺酸二乙醇銨 (PFOS-NH(OH) ₂) Perfluorooctane sulfonate diethanolamine salt (PFOS-NH(OH) ₂)	70225-14-8
	全氟辛基磺酸四乙基銨 (PFOS-N(C_2H_5) ₄) Perfluorooctanesulfonic acid,tetraethylammonium salt (PFOS-N(C_2H_5) ₄)	56773-42-3
	全氟辛基磺酸二癸二甲基銨 (PFOS-DDA) N-decyl-N,N-dimethyldecan-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-sulfonate (PFOS-DDA)	251099-16-8
	全氟辛基磺醯氟 (POSF) Perfluorooctane sulfonyl fluoride (POSF)	307-35-7
	全氟辛基磺酸鎂 (PFOS-Mg) Perfluorooctanesulfonic acid, magnesium salt (PFOS-Mg)	91036-71-4
	全氟辛基磺酸鈉 (PFOS-Na) Perfluorooctanesulfonic acid, sodium salt (PFOS-Na)	4021-47-0



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物質濃度分類 (Classification of Substance Concentration)	物質名稱 (Substance Name)	CAS No.
全氟辛酸及其鹽類 Perfluorooctanoic acid and its salts	全氟辛酸鈉 (PFOA-Na) Sodium perfluorooctanoate (PFOA-Na)	335-95-5
(PFOA and its salts) (CAS No.: 335-67-1 and its salts)	全氟辛酸鉀 (PFOA-K) Potassium perfluorooctanoate (PFOA-K)	2395-00-8
	全氟辛酸銀 (PFOA-Ag) Silver perfluorooctanote (PFOA-Ag)	335-93-3
	全氟辛氟 (PFOA-F) Perfluorooctanoyl fluoride (PFOA-F)	335-66-0
	全氟辛酸銨 (APFO) Ammonium pentadecafluorooctanoate (APFO)	3825-26-1
	全氟辛酸鋰 (PFOA-Li) Lithium perfluorooctanoate (PFOA-Li)	17125-58-5



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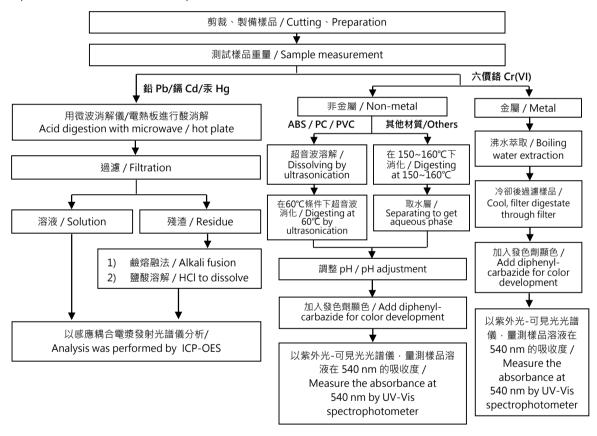
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重金屬流程圖 / Analytical flow chart of heavy metal

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^{6+} test method excluded)





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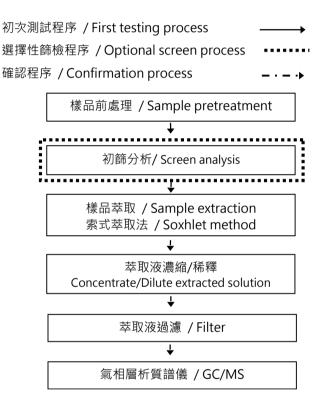
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多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs





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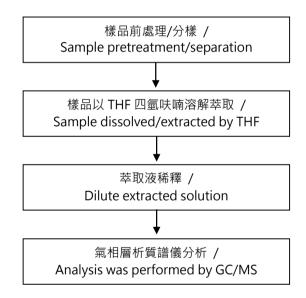
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可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】





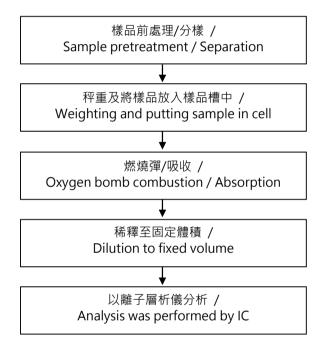
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鹵素分析流程圖 / Analytical flow chart - Halogen





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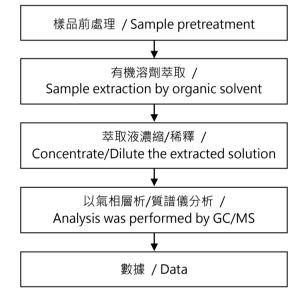
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分析流程圖 / Analytical flow chart

【適用於:多氯聯苯、多氯奈、多氯三聯苯、滅蟻靈、氯化石蠟、DBBT】

*Apply to: PCBs, PCNs, PCTs, Mirex, Chlorinated Paraffins, DBBT





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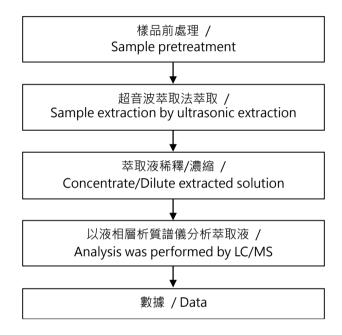
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四溴雙酚-A 分析流程圖 / Analytical flow chart - TBBP-A



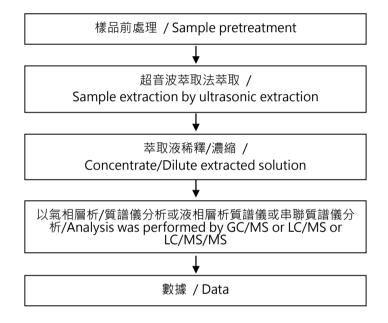


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全氟化合物(包含全氟辛酸/全氟辛烷磺酸/其相關化合物等等)分析流程圖 / Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



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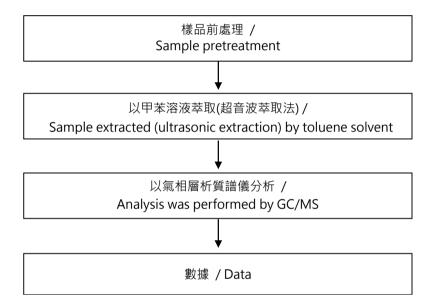
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多環芳香烴分析流程圖 / Analytical flow chart - PAHs (Polycyclic Aromatic Hydrocarbons)





Test Report

號碼(No.): ETR23A05462

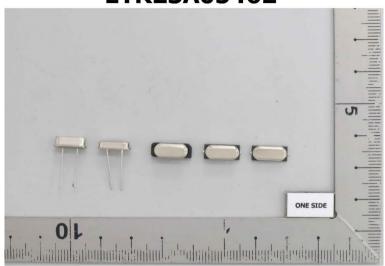
日期(Date): 07-Nov-2023

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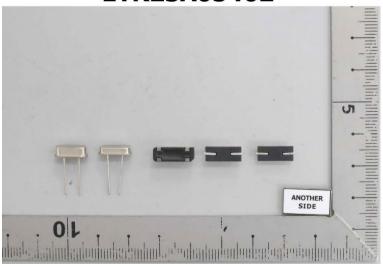
安碁科技股份有限公司 (AKER TECHNOLOGY CO., LTD.) 台中市潭子區建國路11之3號 (NO. 11-3, JIANGUO RD., TANZI DIST., TAICHUNG CITY 427, TAIWAN)

* 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) **