

Test Report

號碼(No.): ETR23701063M02 日期(Date): 24-Jul-2023 頁數(Page): 1 of 15

華新科技股份有限公司 (WALSIN TECHNOLOGY CORPORATION)

桃園市楊梅區高獅路566-1號 (NO. 566-1, KAO-SHI ROAD, YANG-MEI, TAO YUAN 32642, TAIWAN, R. O. C.)

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):

送樣廠商(Sample Submitted By) : 華新科技股份有限公司 (WALSIN TECHNOLOGY CORPORATION)

樣品名稱(Sample Name) : RESISTOR PRODUCT

樣品型號(Style/Item No.) : RESISTOR CHIP/ARRAY/NETWORK/ANTI-SULFUR/AUTOMOTIVE

收件日(Sample Receiving Date) : 05-Jul-2023

測試期間(Testing Period) : 05-Jul-2023 to 12-Jul-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.)

Troy Chang / Department Malager Signed for and on behalf of Alwah SGS TAIWAN LTD. Chemical Laboratory - Taipei



PIN CODE: 826CD14E



Test Report

號碼(No.): ETR23701063M02 日期(Date): 24-Jul-2023 頁數(Page): 2 of 15

華新科技股份有限公司 (WALSIN TECHNOLOGY CORPORATION) 桃園市楊梅區高獅路566-1號 (NO. 566-1, KAO-SHI ROAD, YANG-MEI, TAO YUAN 32642, TAIWAN, R. O. C.)

測試部位敘述 (Test Part Description)

No.1 : 整體混測 (MIXED ALL PARTS)

No.2 : WR08X

測試結果 (Test Results)

測試方法	單位 (Unit)	MDL	結果 (Result)	
(iviethod)	(Unit)		` , '	
				No.2
	mg/kg	2	n.d.	
•				
performed by ICP-OES.)				
參考IEC 62321-5: 2013,以感應耦合電	mg/kg	2	1650	
漿發射光譜儀分析。(With reference to				
IEC 62321-5: 2013, analysis was				
performed by ICP-OES.)				
參考IEC 62321-4: 2013+ AMD1: 2017	mg/kg	2	n.d.	
· 以感應耦合電漿發射光譜儀分析。	J. J			
(With reference to IEC 62321-4:				
· ·				
performed by ICP-OES.)				
參考IEC 62321-7-2: 2017,以紫外光-	mg/kg	8	n.d.	
可見光分光光度計分析。(With	J. J			
•				
analysis was performed by UV-VIS.)				
參考IEC 62321-5: 2013, IEC 62321-7-	mg/kg	8	n.d.	
2: 2017,以感應耦合電漿發射光譜儀、	3 3			
紫外光-可見光分光光度計分析。(With				
•				
,				
	(Method) 参考IEC 62321-5: 2013・以感應耦合電 漿發射光譜儀分析。(With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.) 参考IEC 62321-5: 2013・以感應耦合電 漿發射光譜儀分析。(With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.) 参考IEC 62321-4: 2013+ AMD1: 2017 ・以感應耦合電漿發射光譜儀分析。 (With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.) 参考IEC 62321-7-2: 2017・以紫外光- 可見光分光光度計分析。(With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.)	(Method) (Unit) 参考IEC 62321-5: 2013 · 以感應耦合電	(Method) (Unit) (Unit) (With reference to lEC 62321-5: 2013・以感應耦合電 療發射光譜儀分析。(With reference to lEC 62321-5: 2013, analysis was performed by ICP-OES.) (With reference to lEC 62321-5: 2013, analysis was performed by ICP-OES.) (With reference to lEC 62321-5: 2013, analysis was performed by ICP-OES.) (With reference to lEC 62321-4: 2013+ AMD1: 2017・以感應耦合電漿發射光譜儀分析。(With reference to lEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.) (With reference to lEC 62321-7-2: 2017・以紫外光-可見光分光光度計分析。(With reference to lEC 62321-7-2: 2017, analysis was performed by UV-VIS.) (With reference to lEC 62321-7-2: 2017・以感應耦合電漿發射光譜儀、紫外光-可見光分光光度計分析。(With reference to lEC 62321-5: 2013, IEC 62321-7-2: 2017, analysis was	(Method) (Unit) (Res No.1 参考IEC 62321-5: 2013・以感應耦合電



Test Report

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測試項目	測試方法	單位	MDL	結果	
(Test Items)	(Method)	(Unit)		(Result)	
				No.1	No.2
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)		mg/kg	5	n.d.	
六溴聯苯 (Hexabromobiphenyl)		mg/kg	5	n.d.	
七溴聯苯 (Heptabromobiphenyl)		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)	参考IEC 62321-6: 2015 · 以氣相層析儀/	mg/kg	5	n.d.	
多溴聯苯總和 (Sum of PBBs)	質譜儀分析。(With reference to IEC	mg/kg	-	n.d.	
一溴聯苯醚 (Monobromodiphenyl ether)	62321-6: 2015, analysis was	mg/kg	5	n.d.	
二溴聯苯醚 (Dibromodiphenyl ether)	performed by GC/MS.)	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)		mg/kg	5	n.d.	
六溴聯苯醚 (Hexabromodiphenyl ether)		mg/kg	5	n.d.	
七溴聯苯醚 (Heptabromodiphenyl ether)		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.	

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頁數(Page): 3 of 15



Test Report

號碼(No.): ETR23701063M02

日期(Date): 24-Jul-2023

頁數(Page): 4 of 15

華新科技股份有限公司 (WALSIN TECHNOLOGY CORPORATION) 桃園市楊梅區高獅路566-1號 (NO. 566-1, KAO-SHI ROAD, YANG-MEI, TAO YUAN 32642, TAIWAN, R. O. C.)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	
(Test items)	(iviethod)	(OIIII)		No.1	No.2
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP))		mg/kg	50	n.d.	
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))	- 参考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.	
鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1)		mg/kg	50	n.d.	
鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0)		mg/kg	50	n.d.	
鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DNOP)) (CAS No.: 117-84-0)		mg/kg	50	n.d.	
鄰苯二甲酸二正戊酯 (DNPP) (Di-n-pentyl phthalate (DNPP)) (CAS No.: 131-18-0)		mg/kg	50	n.d.	
鄰苯二甲酸二正己酯 (DNHP) (Di-n-hexyl phthalate (DNHP)) (CAS No.: 84-75-3)		mg/kg	50	n.d.	
鄰苯二甲酸二正庚酯 (Di-n-heptyl phthalate) (CAS No.: 3648-21-3)		mg/kg	50	n.d.	



Test Report

號碼(No.): ETR23701063M02 日期(Date): 24-Jul-2023

頁數(Page): 5 of 15

華新科技股份有限公司 (WALSIN TECHNOLOGY CORPORATION) 桃園市楊梅區高獅路566-1號 (NO. 566-1, KAO-SHI ROAD, YANG-MEI, TAO YUAN 32642, TAIWAN, R. O. C.)

測試項目	測試方法	單位	MDL	結果	
(Test Items)	(Method)	(Unit)		(Result)	
				No.1	No.2
六溴環十二烷及所有主要被辨別出的異構物(HBCDD) (α - HBCDD, β - HBCDD, γ - HBCDD) (Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α - HBCDD, β - HBCDD, γ - HBCDD)) (CAS No.: 25637-99-4, 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	參考IEC 62321-9: 2021·以氣相層析儀/ 質譜儀分析。(With reference to IEC 62321-9: 2021, analysis was performed by GC/MS.)	mg/kg	20	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	mg/kg	50	n.d.	
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)	14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.	
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CEN/TS 15968: 2010 · 以液相層析 串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	
全氟辛酸及其鹽類 (PFOA and its salts) (CAS No.: 335-67-1 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析 串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	
鈹 (Be) (Beryllium (Be)) (CAS No.: 7440-41-7)	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.	



Test Report

號碼(No.): ETR23701063M02 日期(Date): 24-Jul-2023 頁數(Page): 6 of 15

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測試項目	測試方法	單位	MDL	結果	
(Test Items)	(Method)	(Unit)		(Result)	
				No.1	No.2
銻 (Sb) (Antimony (Sb)) (CAS No.: 7440-36-0)	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.	
紅磷 (Red Phosphorus)	以熱裂解-氣相層析儀/質譜儀分析。 (Analysis was performed by Pyrolyzer-GC/MS.)	**	-		Negative

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. "---" = Not Conducted (未測試項目)
- 6. **= Qualitative analysis (No Unit) 定性分析(無單位)
- 7. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
- 8. (*) :

若鉻含量小於六價鉻之方法偵測極限值,則六價鉻為n.d.,不須再測試六價鉻。

The result of Cr(VI) is "n.d." as the result of Chromium (Cr) is less than the MDL of Cr(VI), and confirmation test of Cr(VI) is not required.

若鉻含量未小於六價鉻之方法偵測極限值,需進行六價鉻測試。

If the Chromium (Cr) content is not less than the MDL of Cr(VI), confirmation test of Cr(VI) is required.

- 9. 全氟辛烷磺酸及其鹽類包含等物質 (PFOS and its salts including):
 - CAS No.: 1763-23-1, 2795-39-3, 29457-72-5, 29081-56-9, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7, 91036-71-4, 4021-47-0 and others.
- 10. 全氟辛酸及其鹽類包含等物質 (PFOA and its salts including):
 - CAS No.: 335-67-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0, 3825-26-1 and others.
- 11. For No.1: 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.
- 12. 本報告為 ETR23701063 之異動報告。(This is the additional test report of ETR23701063.)



Test Report

號碼(No.): ETR23701063M02

日期(Date): 24-Jul-2023

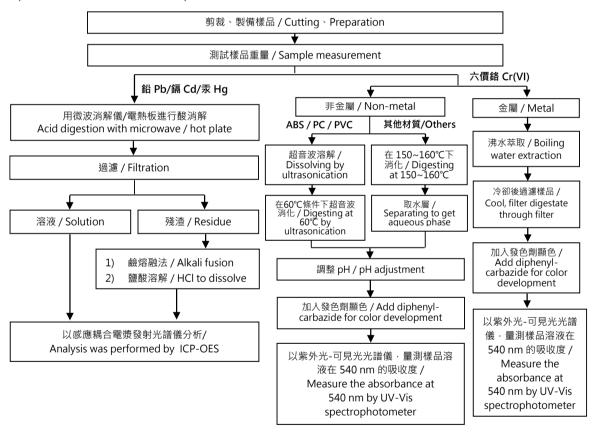
頁數(Page): 7 of 15

華新科技股份有限公司 (WALSIN TECHNOLOGY CORPORATION) 桃園市楊梅區高獅路566-1號 (NO. 566-1, KAO-SHI ROAD, YANG-MEI, TAO YUAN 32642, TAIWAN, R. O. C.)

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)



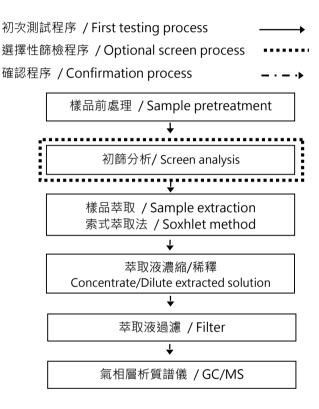


Test Report

號碼(No.): ETR23701063M02 日期(Date): 24-Jul-2023

華新科技股份有限公司 (WALSIN TECHNOLOGY CORPORATION) 桃園市楊梅區高獅路566-1號 (NO. 566-1, KAO-SHI ROAD, YANG-MEI, TAO YUAN 32642, TAIWAN, R. O. C.)

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



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頁數(Page): 8 of 15



Test Report

號碼(No.): ETR23701063M02

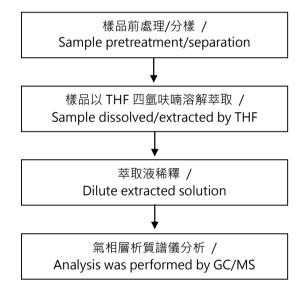
日期(Date): 24-Jul-2023

頁數(Page): 9 of 15

華新科技股份有限公司 (WALSIN TECHNOLOGY CORPORATION) 桃園市楊梅區高獅路566-1號 (NO. 566-1, KAO-SHI ROAD, YANG-MEI, TAO YUAN 32642, TAIWAN, R. O. C.)

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

【測試方法/Test method: IEC 62321-8】



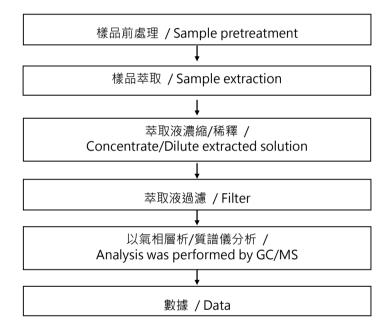


Test Report

號碼(No.): ETR23701063M02 日期(Date): 24-Jul-2023 頁數(Page): 10 of 15

華新科技股份有限公司 (WALSIN TECHNOLOGY CORPORATION) 桃園市楊梅區高獅路566-1號 (NO. 566-1, KAO-SHI ROAD, YANG-MEI, TAO YUAN 32642, TAIWAN, R. O. C.)

六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD



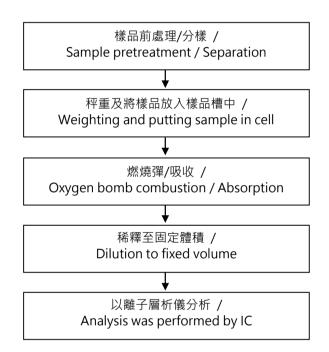


Test Report

號碼(No.): ETR23701063M02 日期(Date): 24-Jul-2023 頁數(Page): 11 of 15

華新科技股份有限公司 (WALSIN TECHNOLOGY CORPORATION) 桃園市楊梅區高獅路566-1號 (NO. 566-1, KAO-SHI ROAD, YANG-MEI, TAO YUAN 32642, TAIWAN, R. O. C.)

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



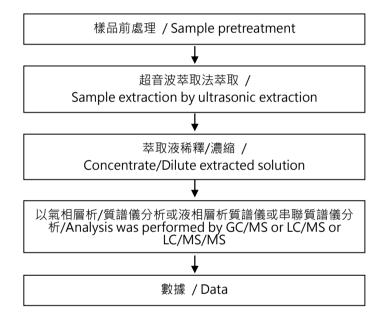


Test Report

號碼(No.): ETR23701063M02 日期(Date): 24-Jul-2023 頁數(Page): 12 of 15

華新科技股份有限公司 (WALSIN TECHNOLOGY CORPORATION) 桃園市楊梅區高獅路566-1號 (NO. 566-1, KAO-SHI ROAD, YANG-MEI, TAO YUAN 32642, TAIWAN, R. O. C.)

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.)





Test Report

號碼(No.): ETR23701063M02

日期(Date): 24-Jul-2023

頁數(Page): 13 of 15

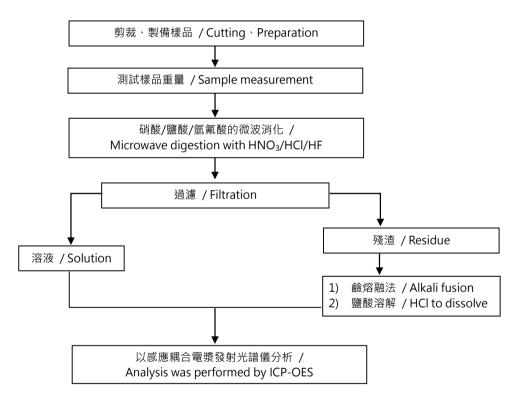
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元素(含重金屬)分析流程圖 / Analytical flow chart of elements (Heavy metal included)

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.



Test Report

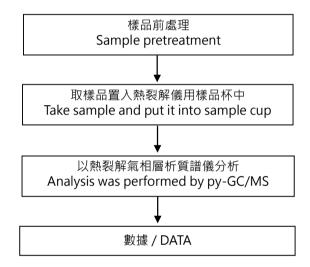
號碼(No.): ETR23701063M02

日期(Date): 24-Jul-2023

頁數(Page): 14 of 15

華新科技股份有限公司 (WALSIN TECHNOLOGY CORPORATION) 桃園市楊梅區高獅路566-1號 (NO. 566-1, KAO-SHI ROAD, YANG-MEI, TAO YUAN 32642, TAIWAN, R. O. C.)

紅磷分析流程 / Analytical flow chart - Red phosphorus





Test Report

號碼(No.): ETR23701063M02

日期(Date): 24-Jul-2023

頁數(Page): 15 of 15

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* 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.)

ETR23701063 NO.1



ETR23701063 NO.2



** 報告結尾 (End of Report) **