Test Report 測試報告

Number 報告號碼 : TWNC01344943

Issue Date 報告發行日期 : Mar 10, 2025

Applicant: 申請廠商
Sin Yu Technology Inc.
信宇科技股份有限公司
No. 115, Tanding, Tanding Village,
Xinshi District, Tainan City ,
Taiwan, R.O.C.
台南市新市區潭頂里潭頂 115 號

Sample Description 樣品敘述:

One (1) Group of Submitted Samples Said To Be :
以下測試樣品乃供應商所提供及確認

Sample Description 樣品名稱 : 電線電纜(Electric wire & Cable)

Date Sample Received 收件日期 : Mar 04, 2025

Date Test Started 開始測試日期 : Mar 04, 2025

Test Conducted 測試執行:

As requested by the applicant, for details please refer to attached pages.
依申請商之要求, 細節請參考附頁.

Conclusion 結論:

Tested Sample 測試樣品	Standard 標準	Result 結果
Test Components of Submitted Samples 測試部位	Restriction of Hazardous Substances (RoHS) 危害物質限制 – As per applicant's request with reference to 2011/65/EU and amendment (EU) 2015/863 依據客戶要求參考歐盟指令 2011/65/EU 及其更新指令 (EU) 2015/863	Pass 合格

Tested Components 測試元件

(1) Black cable insulation
(2) Red cable jacket
(3) White cable jacket
(4) Black cable jacket
(5) Coppery metal wire

Authorized By:
On behalf of Intertek Testing Services Taiwan Limited

Matt Wang
General Manager

Signed by:

Thomas Chou
Manager

報告查詢 Report Verification

Intertek Testing Services Taiwan Ltd.
全國公證檢驗股份有限公司
8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Test Conducted 測試內容：

Test Result Summary 測試結果：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (1/2)	Result 結果 (3/4)	RL
Heavy Metal 重金屬					
Cadmium (Cd) Content 鎘含量	ppm	With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. 參考 IEC 62321-5: 2013，以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	ND	2
Lead (Pb) Content 鉛含量	ppm	With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. 參考 IEC 62321-5: 2013，以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	ND	2
Mercury (Hg) Content 汞含量	ppm	With reference to IEC 62321-4: 2013+AMD1: 2017, by microwave or acid digestion and determined by ICP-OES. 參考 IEC 62321-4: 2013+AMD1: 2017，以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	ND	2
Chromium VI (Cr(VI)) Content 六價鉻含量	ppm	With reference to IEC 62321-7-2: 2017, organic solvent was used to dissolve or swell sample matrix, followed by alkaline digestion and determined by UV-Vis Spectrophotometer. 參考 IEC 62321-7-2:2017，以有機溶劑溶解或使樣品基質膨脹，再進行鹼液消化，用紫外光-可見光分光光度計分析。	ND	ND	8

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Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (1/2)	Result 結果 (3/4)	RL
Polybrominated Biphenyls (PBBs) 多溴聯苯					
Monobrominated Biphenyls (MonoBB) 單溴聯苯	ppm	With reference to IEC 62321-6: 2015, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary. 參考 IEC 62321-6: 2015，以溶劑萃取並用氣相層析質譜儀分析，必要時會以高效液相層析儀光二極體陣列偵測儀進行確認。	ND	ND	5
Dibrominated Biphenyls (DiBB) 二溴聯苯	ppm		ND	ND	5
Tribrominated Biphenyls (TriBB) 三溴聯苯	ppm		ND	ND	5
Tetrabrominated Biphenyls (TetraBB) 四溴聯苯	ppm		ND	ND	5
Pentabrominated Biphenyls (PentaBB) 五溴聯苯	ppm		ND	ND	5
Hexabrominated Biphenyls (HexaBB) 六溴聯苯	ppm		ND	ND	5
Heptabrominated Biphenyls (HeptaBB) 七溴聯苯	ppm		ND	ND	5
Octabrominated Biphenyls (OctaBB) 八溴聯苯	ppm		ND	ND	5
Nonabrominated Biphenyls (NonaBB) 九溴聯苯	ppm		ND	ND	5
Decabrominated Biphenyl (DecaBB) 十溴聯苯	ppm		ND	ND	5
Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚					
Monobrominated Diphenyl Ethers (MonoBDE) 單溴聯苯醚	ppm	With reference to IEC 62321-6: 2015, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary. 參考 IEC 62321-6: 2015，以溶劑萃取並用氣相層析質譜儀分析，必要時會以高效液相層析儀光二極體陣列偵測儀進行確認。	ND	ND	5
Dibrominated Diphenyl Ethers (DiBDE) 二溴聯苯醚	ppm		ND	ND	5
Tribrominated Diphenyl Ethers (TriBDE) 三溴聯苯醚	ppm		ND	ND	5
Tetrabrominated Diphenyl Ethers (TetraBDE) 四溴聯苯醚	ppm		ND	ND	5
Pentabrominated Diphenyl Ethers (PentaBDE) 五溴聯苯醚	ppm		ND	ND	5
Hexabrominated Diphenyl Ethers (HexaBDE) 六溴聯苯醚	ppm		ND	ND	5
Heptabrominated Diphenyl Ethers (HeptaBDE) 七溴聯苯醚	ppm		ND	ND	5
Octabrominated Diphenyl Ethers (OctaBDE) 八溴聯苯醚	ppm		ND	ND	5
Nonabrominated Diphenyl Ethers (NonaBDE) 九溴聯苯醚	ppm		ND	ND	5
Decabrominated Diphenyl Ether (DecaBDE) 十溴聯苯醚	ppm		ND	ND	5

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Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (1/2)	Result 結果 (3/4)	RL
Phthalates 鄰苯二甲酸酯					
Di(2-ethylhexyl) Phthalate (DEHP) 鄰苯二甲酸二(2-乙基己基)酯	ppm	With reference to IEC 62321-8:2017, by solvent extraction and determined by GC-MS. 參考 IEC 62321-8:2017，以溶劑萃取並用氣相層析質譜儀分析。	ND	ND	50
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	ppm		ND	ND	50
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	ppm		ND	ND	50
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	ppm		ND	ND	50

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (5)	RL
Heavy Metal 重金屬				
Cadmium (Cd) Content 鎘含量	ppm	With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. 參考 IEC 62321-5: 2013，以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	2
Lead (Pb) Content 鉛含量	ppm	With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. 參考 IEC 62321-5: 2013，以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	2
Mercury (Hg) Content 汞含量	ppm	With reference to IEC 62321-4: 2013+AMD1: 2017, by microwave or acid digestion and determined by ICP-OES. 參考 IEC 62321-4: 2013+AMD1: 2017，以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	2
Chromium VI (Cr(VI)) Content 六價鉻含量 @	$\mu g/cm^2$	With reference to IEC 62321-7-1: 2015, by boiling water extraction and determined by UV-Vis Spectrophotometer or visual observation. 參考 IEC 62321-7-1: 2015，以沸水萃取並用紫外光-可見光分光光度計分析或目測法判定。	Negative	0.10

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Test Conducted 測試內容：

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg
備註 百萬分之一，依據測試樣品重量計算 = 毫克/公斤
ND = Not detected 未檢測出
RL = Reporting limit, quantitation limit of analyte in sample
報告極限，測試樣品之定量偵測極限

@ The explanation of Chromium VI (Cr(VI)) analysis results 六價鉻分析結果說明

Colorimetric result 比色結果	Qualitative Result 定性結果	Explanation 說明
< 0.10 μg/cm^2	Negative 陰性	The result of sample is negative for Cr(VI). The sample coating is considered a non-Cr(VI) based coating. 六價鉻結果為陰性。樣品之鍍層可視為不含六價鉻。
≥ 0.10 μg/cm^2 and ≤ 0.13 μg/cm^2	Inconclusive 不確定	The result of sample is considered to be inconclusive. If addition samples are available, recommend to add trials and get the average result for the final determination. 六價鉻結果為不確定。若可取得較多樣品，建議增加測試次數並取得其平均值，以評估最後結果。
> 0.13 μg/cm^2	Positive 陽性	The result of sample is positive for Cr(VI). The sample coating is considered to contain Cr(VI). 六價鉻結果為陽性。樣品之鍍層可視為含有六價鉻。 A result expresses as Positive, while not an actual value, which indicates a visual observation was used. 當結果以陽性表示，而非數值時，為使用目測法判定。

Responsibility of Chemist 分析人員 : Andy Yu / Vita Fu

Date Sample Received 樣品收件日期 : Mar 04, 2025
Test Period 樣品測試期間 : Mar 04, 2025 to Mar 07, 2025

RoHS Limit RoHS 限值

Restricted Substances 限用物質	Limits 限值
Cadmium (Cd) content 鎘含量	0.01% (100ppm)
Lead (Pb) content 鉛含量	0.1% (1000ppm)
Mercury (Hg) content 汞含量	0.1% (1000ppm)
Chromium VI (Cr(VI)) content 六價鉻含量	0.1% (1000ppm)
Polybrominated Biphenyls (PBBs) 多溴聯苯	0.1% (1000ppm)
Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚	0.1% (1000ppm)
Di(2-ethylhexyl) Phthalate (DEHP) 鄰苯二甲酸二(2-乙基己基)酯	0.1% (1000ppm)
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	0.1% (1000ppm)
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	0.1% (1000ppm)
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	0.1% (1000ppm)

The limits were quoted from Annex II of 2011/65/EU and Amendment (EU) 2015/863 for homogeneous material.
本限值是依據歐盟指令 2011/65/EU 及其更新指令(EU) 2015/863 之附錄二針對均質材質所訂定。

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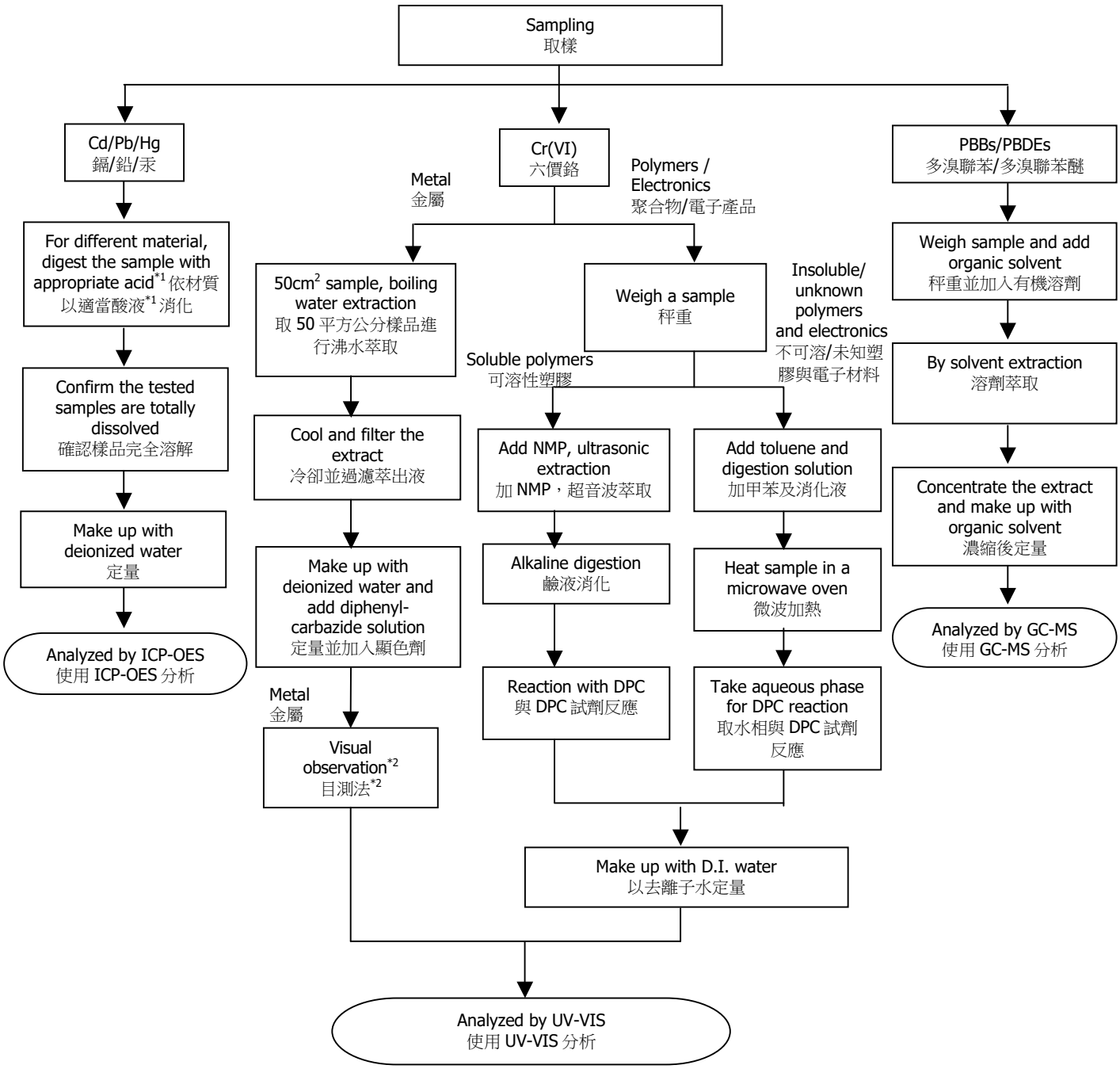
Test Conducted 測試內容：

Measurement Flowchart 測試流程圖:
Test for Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Content RoHS 六項測試
Reference Method 參考方法: Cd/Pb: IEC 62321-5:2013; Hg: IEC 62321-4:2013+AMD1:2017;
Chromium (VI): IEC 62321-7-1:2015 (boiling water extraction);
Chromium (VI): IEC 62321-7-2:2017 (solvent and alkaline extraction);
PBBs/PBDEs: IEC 62321-6:2015



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Test Conducted 測試內容：

Remarks 備註:

*1: List of Appropriate Acid 各材質添加酸液如下表：

Material 材質	Acid Added for Digestion 添加酸液種類
Polymers 聚合物	HNO_3,HCl,HF,H_2O_2,H_3BO_3 硝酸、鹽酸、氫氟酸、雙氧水、硼酸
Metals 金屬	HNO_3,HCl,HF 硝酸、鹽酸、氫氟酸
Electronics 電子產品	HNO_3,HCl,H_2O_2,HBF_4 硝酸、鹽酸、雙氧水、氟硼酸

*2: If sample solution is significantly more intense than 0.13 μg/cm^2 equivalent comparison standard, Chromium VI would be determined as detected, the result of visual observation is positive.
當待測樣品溶液顏色明顯比 0.13 μg/cm^2 深，採用目測法判定六價鉻結果為陽性。

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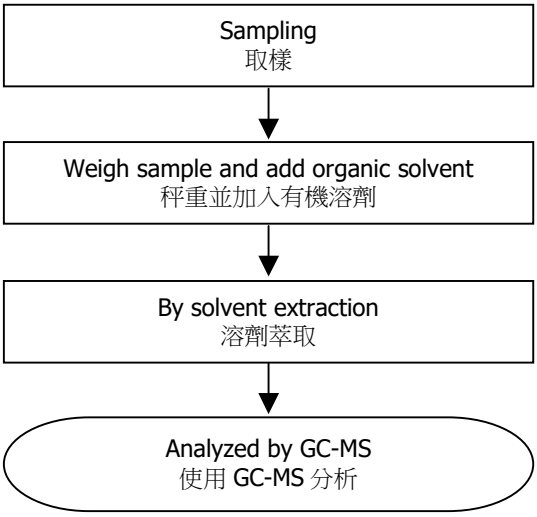
Test Conducted 測試內容：

Measurement Flowchart 測試流程圖:

Test for Phthalates Content 鄰苯二甲酸酯測試
Reference Method 參考方法: IEC 62321-8:2017



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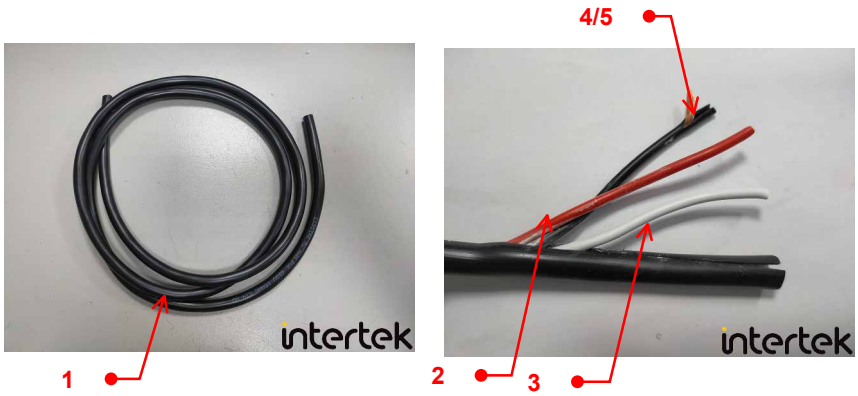
Sample photo 樣品照片：

TWNC01344943



End of Report

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