

# Test Report 測試報告

Number

TWNC01344943

Mar 10, 2025

Result 結果

Pass 合格

報告號碼

Issue Date

報告發行日期

Applicant: Sin Yu Technology Inc. 申請廠商 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 : 電線電纜(Electric wire & Cable)

樣品名稱

Date Sample Received : Mar 04, 2025

收件日期

Date Test Started : Mar 04, 2025

開始測試日期

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 Test Components of

Submitted Samples

測試部位

Standard 標準

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

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









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Test Conducted 測試內容:

Test Result Summary 測試結果:

Test Result Summary 測試結果: <u>Test Item</u>	<u>Unit</u>	Test Method	Resul	t 結果	RL
測試項目	<u>單位</u>	<u>測試方法</u>	(1/2)	(3/4)	<u>KL</u>
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. 参考 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. 参考 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. 参考 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. 参考 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	<u>Unit</u>	Test Method	Resul	t 結果	DI.
測試項目	單位	測試方法	(1/2)	(3/4)	<u>RL</u>
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.	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	參考 IEC 62321-6: 2015,以溶劑萃取並用氣相層析質譜儀分	ND	ND	5
Heptabrominated Biphenyls (HeptaBB) 七溴聯苯	ppm	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	ND	ND	5
Octabrominated Biphenyls (OctaBB) 八溴聯苯	ppm	認。	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
<b>Polybrominated Diphenyl Ether</b>	s (PBDE	5) 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. 参考 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:

<u>Test Item</u>	<u>Unit</u>	<u>Test Method</u>	Resul	t 結果	RL
測試項目	單位	<u>測試方法</u>	(1/2)	(3/4)	<u>IXL</u>
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-	ND	ND	50
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	ppm	8:2017, by solvent extraction and determined by GC-MS.	ND	ND	50
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	ppm	参考 IEC 62321-8:2017,以溶 劑萃取並用氣相層析質譜儀分 析。	ND	ND	50
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	ppm	1/11/-	ND	ND	50

<u>Test Item</u>	<u>Unit</u>	Test Method	Result 結果	RL	
測試項目	單位	<u>測試方法</u>	<u>(5)</u>	IXL	
Heavy Metal <u>重金屬</u>					
Cadmium (Cd) Content 鎘含量	ppm	With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. 参考 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. 参考 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. 参考 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 @	μg/ cm²	With reference to IEC 62321-7-1: 2015, by boiling water extraction and determined by UV-Vis Spectrophotometer or visual observation. 参考 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	







: TWNC01344943 Number

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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	<u>Explanation</u> <u>說明</u>
< 0.10 μg/cm <sup>2</sup>	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。
$\geq 0.10 \ \mu g/cm^2$ and $\leq 0.13 \ \mu g/cm^2$	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/cm²	The result of sample is positive for Cr(VI). The sample coating is considered contain Cr(VI).  Positive	

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	<u>Limits 限值</u>
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:

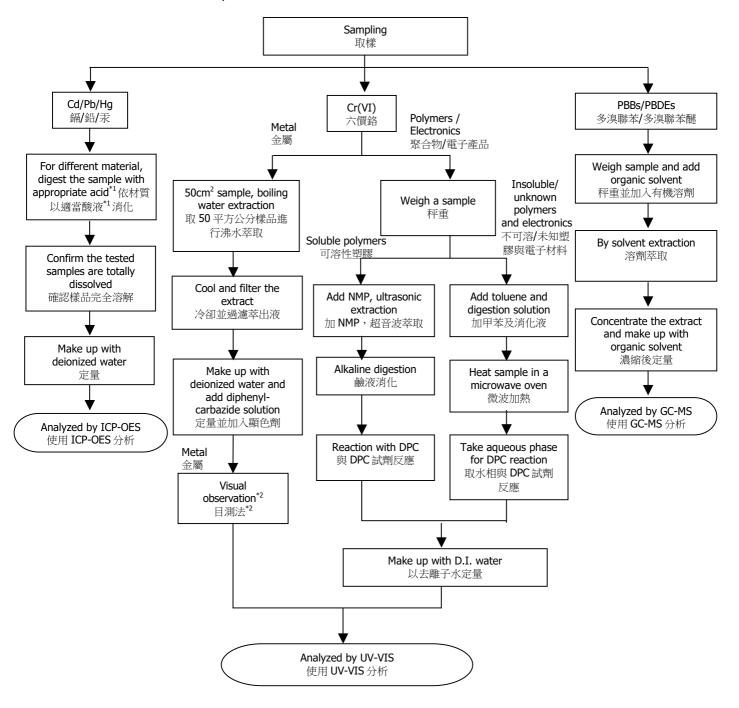
Test for Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Content RoHS 六項測試

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









Intertek Testing Services Taiwan Ltd.



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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:

or Appropriate Acid Life Ambient Appropriate Acid Life Appropriate Acid Life Appropriate Acid Life Appropriate Acid Life Acid			
Material 材質	Acid Added for Digestion 添加酸液種類		
Polymers 聚合物	$HNO_{3,}HCl,HF,H_{2}O_{2,}H_{3}BO_{3}$ 硝酸、鹽酸、氫氟酸、雙氧水、硼酸		
Metals 金屬	HNO <sub>3,</sub> HCl,HF 硝酸、鹽酸、氫氟酸		
Electronics 電子產品	HNO <sub>3,</sub> HCl,H <sub>2</sub> O <sub>2</sub> ,HBF <sub>4</sub> 硝酸、鹽酸、雙氧水、氟硼酸		

\*2: If sample solution is significantly more intense than 0.13 µg/cm² 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  $0.13~\mu g/cm^2~$ 深,採用目測法判定六價鉻結果為陽性。





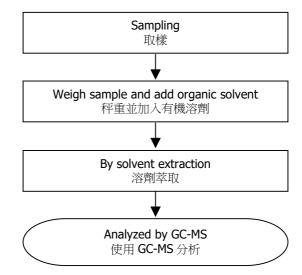


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Test Conducted 測試內容:

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





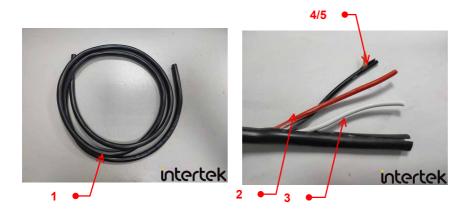




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Sample photo 樣品照片:

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End of Report

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