



TEST REPORT

Report No. : (6225)188-0035
Date : July 16, 2025
Page : 1 of 10

APPLICANT
申請人 : First Hi-tec Enterprise Co., Ltd.
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(R.O.C.)
高技企業股份有限公司
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CONTACT PERSON
聯絡人 : —

DATE OF SUBMISSION
送樣日期 : July 07, 2025
2025 年 07 月 07 日

PERFORMANCE PERIOD
測試日期 : July 07, 2025 to July 16, 2025
2025 年 07 月 07 日至 2025 年 07 月 16 日

SAMPLE DESCRIPTION
樣品描述 : PCB

ITEM NO.
產品型號 : 化錫 Immersion Tin

SUMMARY OF TEST RESULTS 測試結果摘要

TEST REQUESTED 測試要求	CONCLUSION 結論	REMARK 備註
Heavy Metals and Flame Retardants Content – European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) 重金屬和阻燃劑含量 - 有關歐盟委員會針對電子產品的指令(電子電氣禁用某些有害物質指令), 2011/65/EU	DATA 數據	Test result in page 3 測試結果請見第 3 頁
Phthalates Test – Directive (EU)2015/863 Amendment of European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) 鄰苯二甲酸酯測試- 指令 2011/65/EU 歐洲議會和理事會關於電子電氣設備中限制使用某些有害物質 (RoHS) 的修正案指令(EU)2015/863.	DATA 數據	Test result in page 4 測試結果請見第 4 頁

C/N /TC/JK



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**BUREAU
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Report No. : (6225)188-0035
Date : July 16, 2025
Page : 2 of 10

TEST REQUESTED 測試要求	CONCLUSION 結論	REMARK 備註
Perfluorooctanoic acid (PFOA) & Perfluorooctane sulphonate (PFOS) 全氟辛酸和全氟辛烷磺酸	DATA 數據	Test result in page 4 測試結果請見第 4 頁
Hexabromocyclododecane (HBCDD) 六溴環十二烷	DATA 數據	Test result in page 5 測試結果請見第 5 頁

REMARK 備註

If there are questions or concerns on this report, please contact:
若有任何疑問或諮詢，請與我們聯絡：

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VICO LIN
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**BUREAU
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Report No. : (6225)188-0035

Date : July 16, 2025

Page : 3 of 10

TEST RESULT 測試結果

Tested item 測試部件	
1.	Silvery/ green plastic (PCB board) / 銀色/ 綠色塑膠 (電路板)

Heavy Metals and Flame Retardants Content – European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

重金屬和阻燃劑含量 - 有關歐盟委員會針對電子產品的指令(電子電氣禁用某些有害物質指令), 2011/65/EU

Compounds 化合物	Unit 單位	Tested item 測試部件	RoHS' Limits 限用有害物質指令 限值
		1	
Lead [Pb] / 鉛	mg/kg	N.D. 未檢出	1000
Cadmium [Cd] / 鎘	mg/kg	N.D. 未檢出	100
Mercury [Hg] / 汞	mg/kg	N.D. 未檢出	1000
Chromium (VI) [Cr(VI)] / 六價鉻	mg/kg	N.D. 未檢出	1000
Polybrominated Biphenyls[PBBs] / 多溴聯苯			
Bromobiphenyls / 一溴聯苯	mg/kg	N.D. 未檢出	
Dibromobiphenyls / 二溴聯苯	mg/kg	N.D. 未檢出	
Tribromobiphenyls / 三溴聯苯	mg/kg	N.D. 未檢出	
Tetrabromobiphenyls / 四溴聯苯	mg/kg	N.D. 未檢出	
Pentabromobiphenyls / 五溴聯苯	mg/kg	N.D. 未檢出	
Hexabromobiphenyls / 六溴聯苯	mg/kg	N.D. 未檢出	
Heptabromobiphenyls / 七溴聯苯	mg/kg	N.D. 未檢出	
Octabromobiphenyls / 八溴聯苯	mg/kg	N.D. 未檢出	
Nonabromobiphenyls / 九溴聯苯	mg/kg	N.D. 未檢出	
Decabromobiphenyl / 十溴聯苯	mg/kg	N.D. 未檢出	
Sum of PBBs / 多溴聯苯總和	mg/kg	N.D. 未檢出	
Polybrominated Diphenyl Ethers[PBDEs] / 多溴聯苯醚			
Bromodiphenyl ethers / 一溴聯苯醚	mg/kg	N.D. 未檢出	
Dibromodiphenyl ethers / 二溴聯苯醚	mg/kg	N.D. 未檢出	
Tribromodiphenyl ethers / 三溴聯苯醚	mg/kg	N.D. 未檢出	
Tetrabromodiphenyl ethers / 四溴聯苯醚	mg/kg	N.D. 未檢出	
Pentabromodiphenyl ethers / 五溴聯苯醚	mg/kg	N.D. 未檢出	
Hexabromodiphenyl ethers / 六溴聯苯醚	mg/kg	N.D. 未檢出	
Heptabromodiphenyl ethers / 七溴聯苯醚	mg/kg	N.D. 未檢出	
Octabromodiphenyl ethers / 八溴聯苯醚	mg/kg	N.D. 未檢出	
Nonabromodiphenyl ethers / 九溴聯苯醚	mg/kg	N.D. 未檢出	
Decabromodiphenyl ether / 十溴聯苯醚	mg/kg	N.D. 未檢出	
Sum of PBDEs / 多溴聯苯醚總和	mg/kg	N.D. 未檢出	



**BUREAU
VERITAS**

Report No. : (6225)188-0035

Date : July 16, 2025

Page : 4 of 10

TEST RESULT 測試結果

Phthalates Test – Directive (EU)2015/863 Amendment of European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

鄰苯二甲酸酯測試- 指令 2011/65/EU 歐洲議會和理事會關於電子電氣設備中限制使用某些有害物質 (RoHS)的修正案指令(EU)2015/863.

Test Parameter 測試項目	CAS No. CAS 編號	Unit 單位	Tested item 測試部件	Maximum Allowable Limit 最大允許限值
			1	
Dibutyl phthalate (DBP) 鄰苯二甲酸二丁酯	84-74-2	mg/kg	N.D. 未檢出	1000
Butyl benzyl phthalate (BBP) 鄰苯二甲酸丁苄酯	85-68-7	mg/kg	N.D. 未檢出	1000
Bis(2-ethylhexyl) phthalate (DEHP) 鄰苯二甲酸二異辛酯	117-81-7	mg/kg	N.D. 未檢出	1000
Diisobutyl phthalate (DIBP) 鄰苯二甲酸二異丁酯	84-69-5	mg/kg	N.D. 未檢出	1000

Perfluorooctanoic acid (PFOA) & Perfluorooctane sulphonate (PFOS)

全氟辛酸和全氟辛烷磺酸

Compounds 化合物	Unit 單位	Tested item 測試部件
		1
Perfluorooctanoic acid and its salts (PFOA) 全氟辛酸及其鹽類	mg/kg	N.D. 未檢出
Perfluorooctane sulphonate (PFOS) and its salts 全氟辛烷磺酸及其鹽類	mg/kg	N.D. 未檢出

TEST RESULT 測試結果

Hexabromocyclododecane (HBCDD)

六溴環十二烷

Test Parameter 測試項目	CAS No. CAS 編號	Unit 單位	Tested item 測試部件
			1
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α - HBCDD, β - HBCDD, γ -HBCDD) 六溴環十二烷及主要異構體 (α -六溴環十二烷, β -六溴環十二烷, γ -六溴環十二烷)	25637-99-4, 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8)	mg/kg	N.D. 未檢出

Note 註解:

N.D. = Not Detected (未檢出/ 低於報告限值) — = Empty (空白)

mg/kg = milligram per kilogram = ppm (毫克/公斤, 百萬分之一)

Reporting Limit / 報告限值:

Pb, Cd, Hg: 2 mg/kg

Cr(VI): 8 mg/kg

PBBs & PBDEs: Each 5 mg/kg

DBP, BBP, DEHP, DIBP: Each 50 mg/kg

Perfluorooctanoic acid (PFOA) & Perfluorooctane sulphonate (PFOS): 0.01 mg/kg

HBCDD: 5 mg/kg

Test Parameter 測試項目	Test Method 測試方法
Lead [Pb] / 鉛	With reference to IEC 62321-5: 2013. 參照 IEC 62321-5: 2013.
Cadmium [Cd] / 鎘	
Mercury [Hg] / 汞	With reference to IEC 62321-4: 2013+AMD 1:2017 CSV. 參照 IEC 62321-4: 2013+AMD 1:2017 合併版本.
Chromium (VI) [Cr(VI)] / 六價鉻	Polymers & Electronics 聚合物及電子: With reference to IEC 62321-7-2:2017. 參照 IEC 62321-7-2:2017.



**BUREAU
VERITAS**

Report No. : (6225)188-0035

Date : July 16, 2025

Page : 6 of 10

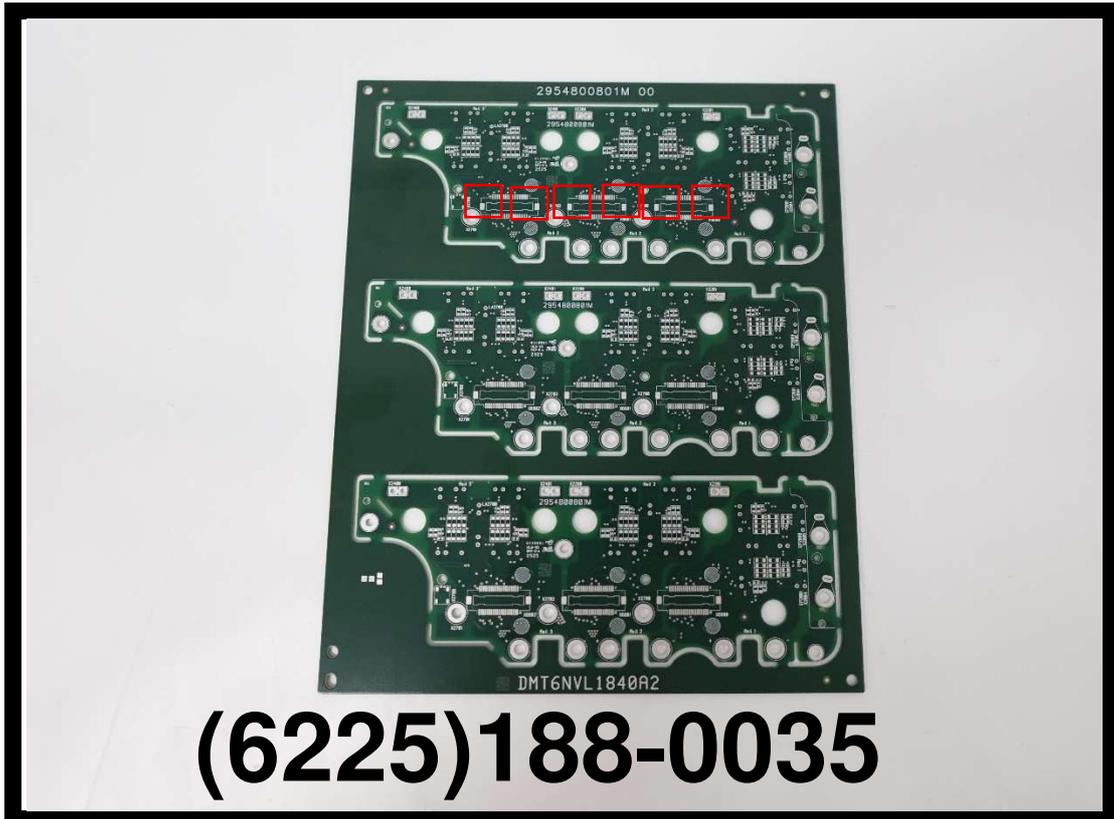
Test Parameter 測試項目	Test Method 測試方法
Polybrominated Biphenyls [PBBs] and Polybrominated Diphenyl Ethers [PBDEs] / 多溴聯苯和多溴聯苯醚	With reference to IEC 62321-6: 2015. 參照 IEC 62321-6: 2015.
Dibutyl phthalate (DBP), Butyl benzyl phthalate (BBP), Bis(2-ethylhexyl) phthalate (DEHP), Diisobutyl phthalate (DIBP) / 鄰苯二甲酸二丁酯, 鄰苯二甲酸丁苄酯, 鄰苯二甲酸二異辛酯, 鄰苯二甲酸二異丁酯	With reference to IEC 62321-8: 2017. 參照 IEC 62321-8: 2017.
Perfluorooctanoic acid and its salts (PFOA) & Perfluorooctane sulphonate (PFOS) and its salts 全氟辛酸及其鹽類和全氟辛烷磺酸及其鹽類	With reference to EN 17681-1: 2025 & EN 17681-2: 2022. 參照 EN 17681-1: 2025 & EN 17681-2: 2022。
Hexabromocyclododecane (HBCDD) / 六溴環十二烷	With reference to IEC 62321-9: 2021 extracted with organic solvent and analyzed by Gas Chromatograph Mass Spectrometer (GC-MS). 參照 IEC 62321-9: 2021 以有機溶劑萃取，氣相層析質譜儀分析 (GC-MS)。

Remark 備註:

1. The result only relates to the tested item. The report shall not be reproduced except full without the written approval of the testing laboratory. Parameters which are not covered by the lab's testing scope are subcontracted to laboratories with government approval. The accreditation relates to competences given in the accreditation certificate.
測試結果僅代表經測試部件。本報告未經測試實驗室認可不得複製。未在本實驗室測試範疇之測試均委外至經官方核可之實驗室。委外實驗室之能力經認證許可。
2. Samples test were conducted as per applicant's request.
樣品測試進行為依照申請人的要求。

- End 結束 -

Photo of the Submitted Sample
委送样品照片



Sample

APPENDIX(附錄)

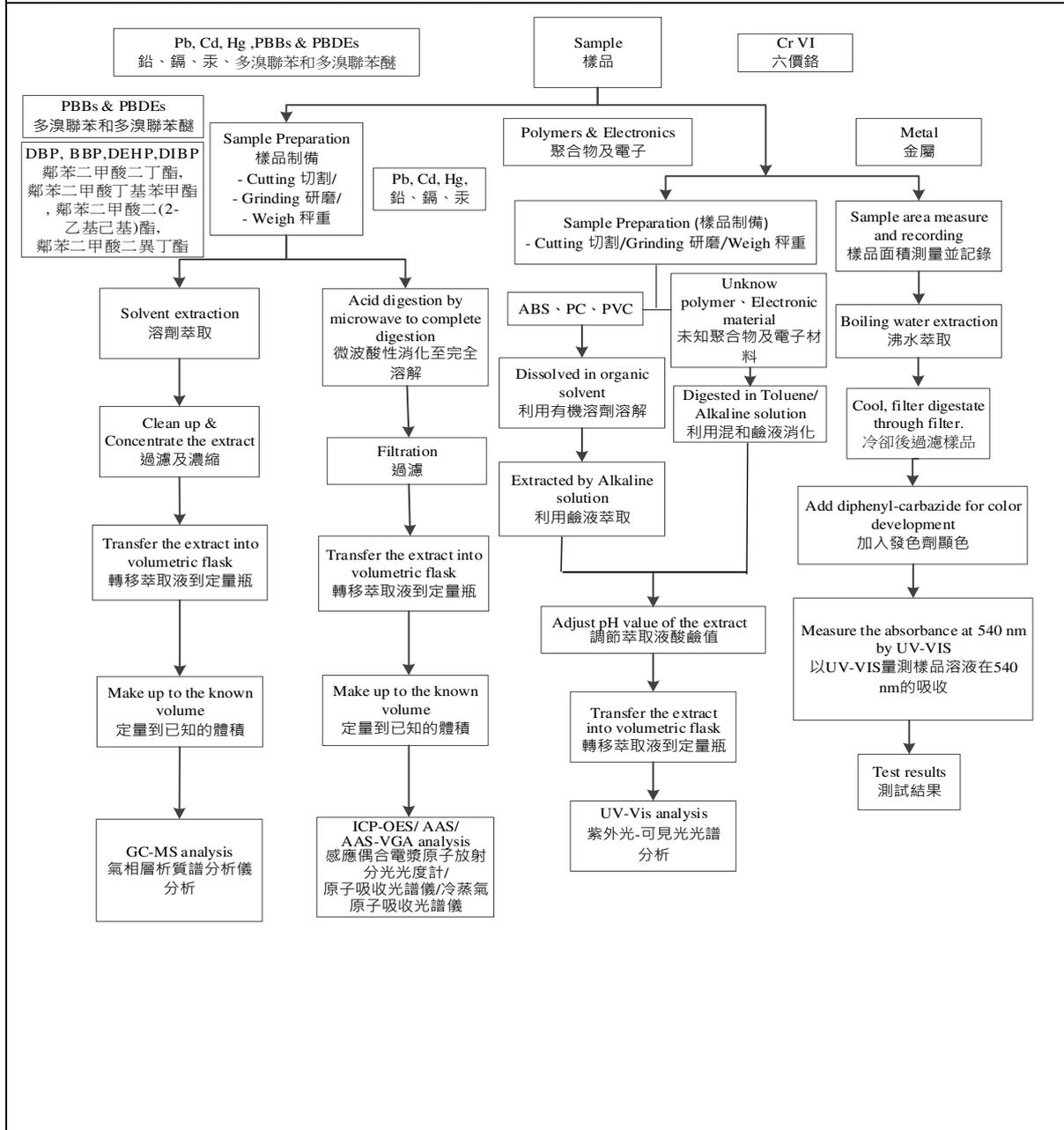
Test Flowchart of Heavy Metals, Flame Retardants and Phthalates Content [European Council Directive 2011/65/EU]:

重金屬, 阻燃劑及鄰苯二甲酸酯含量的測試流程圖 [歐盟委員會指令 2011/65/EU]:

These samples were dissolved totally by pre-conditioning method according to below flow chart.

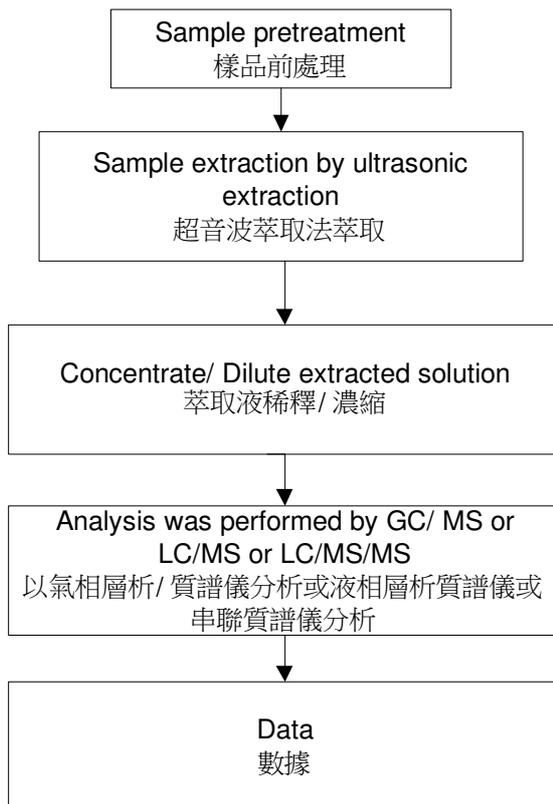
(Cr⁶⁺ test method excluded)

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)



APPENDIX(附錄)

Test Flowchart of PFAS (including PFOA/ PFOS/ its related compounds, etc.):
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)的測試流程圖:



APPENDIX(附錄)

Determinations of Hexabromocyclododecane (HBCDD):

六溴環十二烷的測試流程圖:

