

Test Report 號碼(No. )

號碼(No.): CE/2019/75022

日期(Date): 2019/08/02

元耀科技股份有限公司 YENYO TECHNOLOGY CO., LTD. 宜蘭縣礁溪鄉龍潭村龍泉路189號 NO. 189, LUNG CHIUAN ROAD, LUNGTAN TSUEN, JIAU-SHI SHIANG, YI-LAN COUNTY 26246, 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/on
behalf of the applicant as):		
送樣廠商(Sample Submitted By)	:	元耀科技股份有限公司(YENYO TECHNOLOGY CO., LTD.)
樣品名稱(Sample Description)	:	DIODE MODULE RECTIFIER / PRESS-FIT AUTO
收件日期(Sample Receiving Date)	:	2019/07/25
測試期間(Testing Period)	:	2019/07/25 to 2019/08/02

**测試結果(Test Results)** : 請參閱下一頁 (Please refer to following pages).

Troy Chang / Manager - Tec Signed for and behalf of SGS TAIWAN LTD. AIW Chemical Laboratory - Taipei



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#### 測試結果(Test Results)

測試部位(PART NAME)No.1 : 整體混測 (MIXED ALL PARTS)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result) No.1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321-5 (2013),以感應耦合 電漿原子發射光譜儀檢測. / With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n. d.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321-5 (2013),以感應耦合 電浆原子發射光譜儀檢測. / With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	20900
汞 / Mercury (Hg)	mg/kg	参考IEC 62321-4:2013+ AMD1:2017, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321- 4:2013+ AMD1:2017 and performed by ICP-AES.	2	n. d.
六價鉻 / Hexavalent Chromium Cr(VI) (◆)	mg/kg	参考IEC 62321-7-2 (2017),以UV-VIS 検測;参考IEC 62321-5 (2013),以 ICP-AES検測. / With reference to IEC 62321-7-2 (2017) and performed by UV-VIS.; With reference to IEC 62321-5 (2013) and performed by ICP-AES.	8	n. d.
六溴環十二烷及所有主要被辨別出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ – HBCDD, $\beta$ – HBCDD, $\gamma$ – HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	参考IEC 62321 (2008),以氣相層析/ 質譜儀檢測. / With reference to IEC 62321 (2008). Analysis was performed by GC/MS.	5	n. d.



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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result)
				No. 1
多溴聯苯總和 / Sum of PBBs	mg/kg		-	n. d.
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	參考IEC 62321-6 (2015),以氣相層析	5	n. d.
十溴聯苯 / Decabromobiphenyl	mg/kg	/質譜儀檢測. / With reference to	5	n. d.
多溴聯苯醚總和 / Sum of PBDEs	mg/kg	IEC 62321-6 (2015) and performed	_	n. d.
一溴聯苯醚 / Monobromodiphenyl ether	mg/kg	by GC/MS.	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	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	1 1	5	n. d.
八溴聯苯醚 / Octabromodiphenyl ether	mg/kg	1 1	5	n. d.
九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg	1 1	5	n. d.
十溴聯苯醚 / Decabromodiphenyl ether	mg/kg	1 1	5	n. d.



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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result) No.1
鄰苯二甲酸丁苯甲酯 / BBP(Butyl Benzyl phthalate)(CAS No.: 85-68-7)	mg/kg	参考IEC 62321-8 (2017),以氣相層析 /質譜儀檢測. / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n. d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg		50	n. d.
鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg		50	n. d.
鄰苯二甲酸二異丁酯 / DIBP (Di- isobutyl phthalate) (CAS No.: 84-69- 5)	mg/kg		50	n. d.
鄰苯二甲酸二異癸酯 / DIDP (Di- isodecyl phthalate) (CAS No.: 26761- 40-0; 68515-49-1)	mg/kg		50	n. d.
鄰苯二甲酸二異壬酯 / DINP (Di- isononyl phthalate) (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)(CAS No.: 117-84-0)	mg/kg		50	n. d.

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### 備註(Note):

- 1. mg/kg = ppm; 0. 1wt% = 1000ppm
- 2. MDL = Method Detection Limit (方法偵測極限值)
- 3. n.d. = Not Detected (未檢出)
- 4. "-" = Not Regulated (無規格值)

5. (•):

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.



# 測試報告 Test Report<sup>號</sup>

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6. 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 samples was/were analyzed on behalf of the applicant as mixing sample in one testing. The above results was/were only given as the informality value.)



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#### 重金屬流程圖 / Analytical flow chart of Heavy Metal

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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. (Cr6+ test method excluded) 測試人員:陳恩臻 / Technician : Rita Chen

測試負責人:張啟興 / Supervisor: Troy Chang 剪裁、製備樣品 / Cutting、Preparation 測試樣品重量 / Sample Measurement 六價鉻 Cr(VI) 鉛 Pb/鍋 Cd/汞 Hg/鉻 Cr 非金屬 / Non-metal 金屬 / Metal 用微波消解儀/電熱板進行酸消解 ABS / PC / PVC 其他材質/Others Acid digestion with microwave / hotplate € 沸水萃取 / Boiling 超音波溶解 / 在150~160℃下消 water extraction 化 / Digesting at 150~160℃ Dissolving by ultrasonication 過濾 / Filtration 冷卻後過濾樣品/ 在60℃條件下超音波 消化 / Digesting at 60℃ by ultrasonication 取水層 / Separating Cool, filter digestate to get aqueous through filter 溶液 / Solution 殘渣 / Residue phase 加入發色劑顯色 / Add diphenyl-+ 1) 鹼熔融法 / Alkali fusion 調整 pH / pH adjustment carbazide for color 2) 鹽酸溶解 / HCI to dissolve development 加入發色劑顯色 / Add diphenyl-carbazide for color development 以 UV-VIS, 量測樣 品溶液在 540 nm 的 感應耦合電漿原子發射光譜儀 / ICP-AES 以 UV-VIS, 量測樣品溶液在 540 nm 的 吸收度 / Measure 吸收度 / Measure the absorbance at the absorbance at 540 nm by UV-VIS 540 nm by UV-VIS



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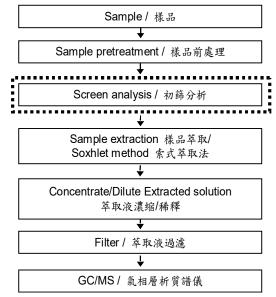
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#### 多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBB/PBDE

- 测試人員:涂雅苓 / Technician: Yaling Tu
- 測試負責人:張啟興 / Supervisor: Troy Chang

初次測試程序 / First testing process -選擇性篩檢程序 / Optional screen process ••••••• 確認程序 / Confirmation process \_ · \_ · ▶





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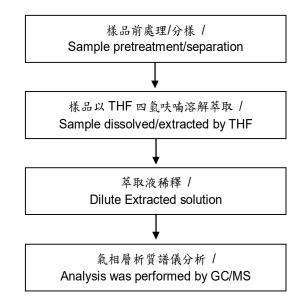
#### 可塑劑分析流程圖 / Analytical flow chart - Phthalate

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- 測試人員:涂雅苓 / Technician: Yaling Tu
- 測試負責人:張啟興 / Supervisor: Troy Chang

#### 【测試方法/Test method: IEC 62321-8】





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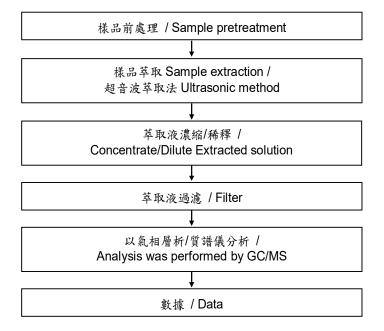
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### 六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD

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- 測試人員:涂雅苓 / Technician: Yaling Tu
- 測試負責人:張啟興 / Supervisor: Troy Chang





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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.)



\*\* 報告結尾 (End of Report) \*\*