寶	號
CUST	OMER

MARITEX



承認書

SPECIFICATION FOR APPROVAL

品名 PRODUCT NAME -	K5B RH 3.5*7.5*0.8-D-	Т
客戶料號 CUSTOMER PART	NO	扎號 SAMPLE NO.
日期 DATE. 2022/	07/07	

Customer Approved Status 客戶承認範圍

FULLY APPROVED (全部承認)	PARTILLY APPROVED (部份承認)	REVISE APPROVED (修訂承認)
Drawn by	Checked by	Approved by
東東农	吴明琛	吳炳勳



KING CORE ELECTRONICS INC.

NO 269, Nanfong Rd., Pingjhen City, Taoyuan County Taiwan

Tel: 886-3-4698855 Fax: 886-4691395 Website:http://www.kingcore.com.tw E-mail: kc@mail.kingcore.com.tw

承認書內容 CONTENTS

項目	頁數	備註
LISTED ITEM	PAGE	REMARK
1. 承認書封面 COVER PAGE	1	
2. 目錄 INDEX	2	
3. 修訂履歷 REVISION RESUME	3	
4. 工程圖面 SHAPES AND DIMENSIONS	4	
5. 電氣特性 ELECTRICAL SPECIFICATIONS	4	
6. 產品測試資料 CHARACTERISTICS TEST DATA	5	
7. 阻抗曲線圖 ELECTRICAL CHARACTERISTICS CURVE	6	
8. SGS 測試報告 SGS REPORT	7-44	
製作 DRAWN BY: 確認 CHECKED BY:	承認 APPF	ROVED BY: 美炳勲

修訂履歷 REVISION RESUME

日期 DATE	版次 VERSION		丁目的 RPOSE	修訂內容 REVISION DES		備註 REMARK
2022/07/07	A	首次送				
製作 DRAWN I	BY: 要胶	1	確認 CHECK	ED BY: 吴明译	承認 APPROVED B 美力	Y: 方 <u>動</u>

SPECIFICATION FOR APPROVAL

CUSTOMER:	MARITEX			CUS	ST.P/N:		
ORDERING CODE:	K5B RH 3.5*7.5*0).8-D-T		K.C.	.P/N:	PS03D1I	T
(1) SHAPE:				Α	3.50±0.15	5	mm
				В	7.5±0.3		mm
		<u>† </u>	ÞΑ				
0.65¢			0.65				
			כט.ט				
-18±0.5-1							
<u> </u>		Щ					
12.7±0.3-	5±0.5						
12.120.3	320.2	,					
(2) EL ECEDICA I				(2) (2)			
(2)ELECTRICAL		` N / I I _			EST CON EDANCE AN <i>A</i>		
		5 MHz			ST FIXTURE		16092A
L_2 — 134 IIIII.	OHM AT 100	ΣΙΝΙΠΖ					
DDC (O (RE:Φ 0.65 T.C	C.Wmm x 1/2	Ts
RDC: 6mΩ (m					HIOKI3540		
IDC:△T40°C:	6A(max.)			4.IDC:H	HP4284A+HP42	2841A	
(4)PACKING				(5) A	PPEARAN	NCE	
IN BUL	.K VACUUM		INSERTION		reak ≦ 1/3 termin		
PCS/BAG*	BAGS/INNER BOX'	BOXES/CARTON =	PCS				
PCS/PLATE*	PLATES/CARTON=	PCS		Depth of	break≤1/2 wall	thickness	
PCS/TRAY*	TRAYS/CARTON=	PCS		It is cor	nsidered as a n	normal conditi	on that the
2000 PCS/I INNER	BOX* INNER BOX/I	CARTON=	PCS	surface	of core covers	with ferrite p	owder.
(6)REMARK:				App	roved by	吳炳勲	
				Che	cked by	吴明珠	
				Drav	wn by	練要胶	2022/7/7
				DW	G.NO.	20227001	A

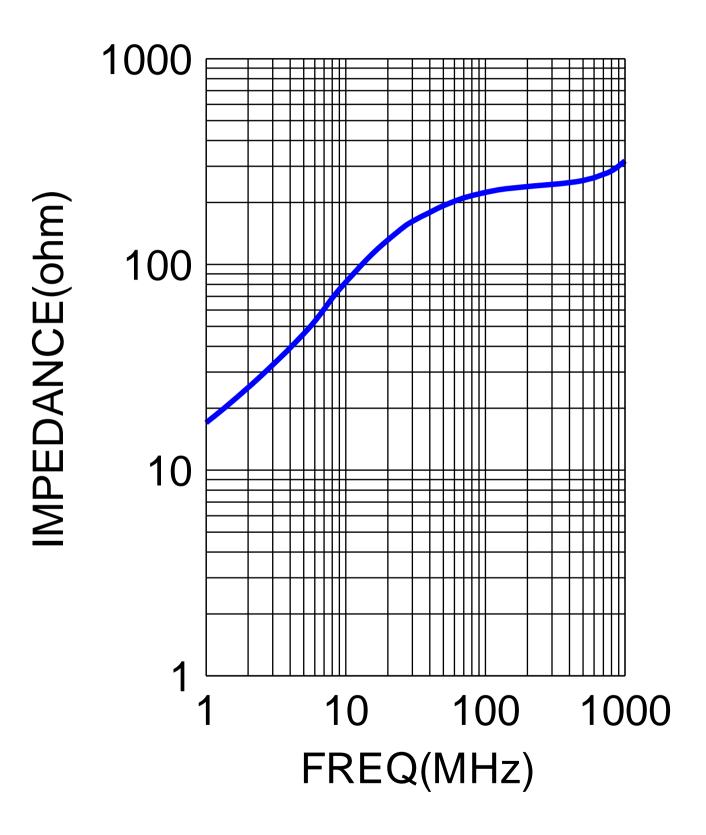
ER011B

TEST DATA FOR PREPRODUCTION SAMPLES

	MARITEX		CUST. P/N		
K5B R	H 3.5*7.5*0	.8-D-T	K.C. P/N	PS03D1IT	
24 °C	RH	69 %	DWG.NO.	20227001A	
0.65 T.C.W	WINDING	1/2 Ts	O'TY	5PCS	
S			\ = =	10 = 0 %	
Z1 (OHM)	Z2 (OHM)	$RDC(m\Omega)$	A mm	B mm	
107 min.	154 min.	6 max.	3.50±0.15	7.5±0.3	
25 MHz	100 MHz				
149	224	3.63	3.51	7.66	
148	226	3.85	3.53	7.67	
146	216	3.75	3.53	7.66	
151	231	3.84	3.54	7.65	
149	225	3.87	3.51	7.66	
148.6	224.4	3.788	3.524	7.660	
5	15	0.24	0.03	0.02	
				Approved by:	英炳勲
				Checked by:	吴明琛
				Drawn by:	集要较
	24 °C 0.65 T.C.W S Z1 (OHM) 107 min. 25 MHz 149 148 146 151 149 148.6	K5B RH 3.5*7.5*0 24 °C RH WINDING 0.65 T.C.W WINDING 8 Z1 (OHM) Z2 (OHM) 107 min. 154 min. 25 MHz 100 MHz 149 224 148 226 149 225 149 225 149 225 148.6 224.4	K5B RH 3.5*7.5*0.8-D-T 24 °C RH 69 % 0.65 T.C.W WINDING 1/2 Ts S WINDING 1/2 Ts Z1 (OHM) Z2 (OHM) RDC (mΩ) 107 min. 154 min. 6 max. 25 MHz 100 MHz 40 3.63 148 226 3.85 146 216 3.75 151 231 3.84 149 225 3.87 149 225 3.87 148.6 224.4 3.788	K5B RH 3.5*7.5*0.8-D-T K.C. P/N 24 °C 0.65 T.C.W WINDING 1/2 Ts PWG.NO. 0.65 T.C.W WINDING 1/2 Ts OTY S VIII (OHM) Z2 (OHM) RDC (mΩ) A mm 107 min. 154 min. 6 max. 154 min. 154 m	K5B RH 3.5*7.5*0.8-D-T K.C. P/N PS03D11T 24 °C RH 69 % DWG.NO. 20227001A 20.65 T.C.W WINDING 1/2 Ts O'TY 5PCS S S S S S S S S S

KING CORE ELECTRONICS INC.

K5B RH 3.5*7.5*0.8-D-T



CTI华测检测

檢測報告 Test Report



報告編號 A2220056742101002E **Report No.** A2220056742101002E 第 1 頁 共 11 頁 Page 1 of 11

報告抬頭公司名稱 釣寶電子工業股份有限公司 KING CORE ELECTRONICS INC.

shown on Report

地 址 桃園市平鎮區南豐路269號

Address NO.269, NANFONG RD., PINGJHEN DIST., TAOYUAN CITY 324 - 59, TAIWAN

以下測試之樣品及樣品資訊由申請者提供並確認

 $The following \ sample(s) \ and \ sample \ information \ was/were \ submitted \ and \ identified \ by/on \ the \ behalf \ of \ the \ applicant$

樣品名稱 FERRITE CORE Sample Name FERRITE CORE

樣品型號 K5B Part No. K5B

樣品接收日期 2022.02.10 Sample Received Date Feb. 10, 2022

樣品檢測日期 2022.02.21 - 2022.03.01 Testing Period Feb. 21, 2022 to Mar. 1, 2022

檢測要求 根據客戶要求,對所提交樣品中的鉛(Pb), 鎘(Cd), 汞(Hg), 六價鉻(Cr(VI)), 多溴

聯苯(PBBs), 多溴二苯醚(PBDEs), 鄰苯二甲酸酯(DBP, BBP, DEHP, DIBP), 氟(F),

氯(CI), 溴(Br), 碘(I), 全氟辛烷磺酸(PFOS), 全氟辛酸(PFOA), 六溴環十二烷

(HBCDD), 砷(As), 鈹(Be), 銻(Sb)進行測試。

Test Requested As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent

Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Fluorine (F), Chlorine (Cl),

Bromine (Br), Iodine (I), Antimony(Sb), Arsenic(As), Beryllium(Be), Hexabromocyclododecane (HBCDD), Perfluorooctane Sulfonates(PFOS),

Perfluorooctanoic Acid(PFOA) in the submitted sample(s).

檢測依據/檢測結果 請參見下頁。

Test Method/Test Result(s) Please refer to the following page(s).



審核
Reviewed by
日期
Date
2022.03.01

No. R556662006

桃園市蘆竹區南崁路二段9號5樓之6

 $5F^{\scriptscriptstyle -}$ 6, No.9, Sec.2, Nankan Rd, Luzhu Dist., Taoyuan, Taiwan



報告編號 A2220056742101002E **Report No.** A2220056742101002E 第 2 頁 共 11 頁 Page 2 of 11

結論 Conclusion

測試樣品 Tested Sample	依據標準/指令 According to standard/directive	結果 Result
提交樣品 Submitted Sample	歐盟RoHS指令2011/65/EU及其修訂指令(EU) 2015/863	符合
	RoHS Directive 2011/65/EU with amendment	PASS
	(EU) 2015/863	

符合表示檢測結果滿足歐盟RoHS指令2011/65/EU及其修訂指令(EU) 2015/863要求的限值。

PASS means that the results shown on the report comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.



報告編號 A2220056742101002E **Report No.** A2220056742101002E 第 3 頁 共 11 頁 Page 3 of 11

檢測依據 Test Method

測試項目 Test Item(s)	測試方法 Test Method	測試儀器 Measured Equipment(s)
鉛 Lead (Pb)	IEC 62321 - 5:2013	ICP- OES
鎘 Cadmium (Cd)	IEC 62321 - 5:2013	ICP- OES
汞 Mercury (Hg)	IEC 62321 - 4:2013+AMD1:2017 CSV	ICP- OES
六價鉻 Hexavalent Chromium (Cr(VI))	IEC 62321- 7- 2:2015	UV- Vis
多溴聯苯 Polybrominated Biphenyls (PBBs)	IEC 62321 - 6:2015	GC- MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321 - 6:2015	GC- MS
鄰苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321 - 8:2017	GC- MS
氟 Fluorine (F)	参考EN 14582:2016 Refer to EN 14582:2016	IC
氯 Chlorine (Cl)	参考EN 14582:2016 Refer to EN 14582:2016	IC
溴 Bromine (Br)	參考EN 14582:2016 Refer to EN 14582:2016	IC
碘 Iodine (I)	參考EN 14582:2016 Refer to EN 14582:2016	IC



報告編號 A2220056742101002E **Report No.** A2220056742101002E 第 4 頁 共 11 頁 Page 4 of 11

檢測依據 Test Method

測試項目 Test Item(s)	測試方法 Test Method	測試儀器 Measured Equipment(s)
全氟辛烷磺酸 Perfluorooctane Sulfonates(PFOS)	参考US EPA 3550C:2007 & US EPA 8321B:2007 Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC- MS- MS
銻 Antimony(Sb)	参考US EPA 3050B:1996 & US EPA 6010D:2018 Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP- OES
鈹 Beryllium(Be)	参考US EPA 3050B:1996 & US EPA 6010D:2018 Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP- OES
全氟辛酸 Perfluorooctanoic Acid(PFOA)	参考US EPA 3550C:2007 & US EPA 8321B:2007 Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC- MS- MS
神 Arsenic(As)	参考US EPA 3050B:1996 & US EPA 6010D:2018 Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP- OES
六溴環十二烷 Hexabromocyclododecane (HBCDD)	IEC 62321 - 6:2015	GC- MS



報告編號 A2220056742101002E **Report No.** A2220056742101002E 第 5 頁 共 11 頁 Page 5 of 11

檢測結果 Test Result(s)

測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL	限值 Limit
鉛 Lead (Pb) *	N.D.	2 mg/kg	1000 mg/kg
鎘 Cadmium (Cd) *	N.D.	2 mg/kg	100 mg/kg
汞 Mercury (Hg) *	N.D.	2 mg/kg	1000 mg/kg
六價鉻 Hexavalent Chromium (Cr(VI))	N.D.	8 mg/kg	1000 mg/kg

測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL	限值 Limit
多溴聯苯 Polybrominated Biphenyls (PBI	Bs) *		
PBBs PBBs (PBBs)	N.D.	/	
一溴聯苯 Monobromobiphenyl	N.D.	5 mg/kg	
二溴聯苯 Dibromobiphenyl	N.D.	5 mg/kg	
三溴聯苯 Tribromobiphenyl	N.D.	5 mg/kg	
四溴聯苯 Tetrabromobiphenyl	N.D.	5 mg/kg	1000 mg/kg
五溴聯苯 Pentabromobiphenyl	N.D.	5 mg/kg	
六溴聯苯 Hexabromobiphenyl	N.D.	5 mg/kg	
七溴聯苯 Heptabromobiphenyl	N.D.	5 mg/kg	
八溴聯苯 Octabromobiphenyl	N.D.	5 mg/kg	
九溴聯苯 Nonabromobiphenyl	N.D.	5 mg/kg	
十溴聯苯 Decabromobiphenyl	N.D.	5 mg/kg	
測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL	限值 Limit
多溴二苯醚 Polybrominated Diphenyl Eth	ners (PBDEs) *		
PBDEs PBDEs (PBDEs)	N.D.	/	
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg	
No. of the winter with the second sec			
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg	
二溴二苯醚 Dibromodiphenyl ether 三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg 5 mg/kg	
1 ,			1000 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg	1000 mg/kg
三溴二苯醚 Tribromodiphenyl ether 四溴二苯醚 Tetrabromodiphenyl ether	N.D. N.D.	5 mg/kg 5 mg/kg	1000 mg/kg
三溴二苯醚 Tribromodiphenyl ether 四溴二苯醚 Tetrabromodiphenyl ether 五溴二苯醚 Pentabromodiphenyl ether	N.D. N.D. N.D.	5 mg/kg 5 mg/kg 5 mg/kg	1000 mg/kg
三溴二苯醚 Tribromodiphenyl ether 四溴二苯醚 Tetrabromodiphenyl ether 五溴二苯醚 Pentabromodiphenyl ether 六溴二苯醚 Hexabromodiphenyl ether	N.D. N.D. N.D. N.D.	5 mg/kg 5 mg/kg 5 mg/kg 5 mg/kg	1000 mg/kg
三溴二苯醚 Tribromodiphenyl ether 四溴二苯醚 Tetrabromodiphenyl ether 五溴二苯醚 Pentabromodiphenyl ether 六溴二苯醚 Hexabromodiphenyl ether 七溴二苯醚 Heptabromodiphenyl ether	N.D. N.D. N.D. N.D. N.D.	5 mg/kg 5 mg/kg 5 mg/kg 5 mg/kg 5 mg/kg	1000 mg/kg



報告編號 A2220056742101002E **Report No.** A2220056742101002E 第 6 頁 共 11 頁 Page 6 of 11

檢測結果 Test Result(s)

測試項目 Tested Item(s)	結果 Result	方法檢出 MDL		限值 Limit
鄰苯二甲酸酯 Phthalates (DBP, BBP, D	EHP, DIBP) *			
鄰苯二甲酸丁基苄基酯 Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg	3	1000 mg/kg
鄰苯二甲酸二(2- 乙基)己酯 Di- (2- ethylhexyl) phthalate (DEHP) CAS#:117- 81- 7	N.D.	50 mg/kg		1000 mg/kg
鄰苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg	5	1000 mg/kg
鄰苯二甲酸二異丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg	5	1000 mg/kg
測試項目 Tested Item(s)	結果 Result		方法	檢出限 MDL
氟 Fluorine (F) *	N.D.			50 mg/kg
氯 Chlorine (Cl) *	N.D.			50 mg/kg
溴 Bromine (Br) *	N.D.			50 mg/kg
碘 Iodine (I) *	N.D.			50 mg/kg
測試項目 Tested Item(s)	結果 Result		方法	檢出限 MDL
六溴環十二烷 Hexabromocyclododecane (HBCDD) *	N.D.			5 mg/kg
測試項目 Tested Item(s)	結果 Result		方法	檢出限 MDL
鈹 Beryllium (Be)	N.D.			2 mg/kg
測試項目 Tested Item(s)	結果 Result		方法	檢出限 MDL
全氟辛酸 Perfluorooctanoic Acid (PFOA) *	N.D.			5 mg/kg
測試項目 Tested Item(s)	結果 Result		方法	檢出限 MDL
全氟辛烷磺酸 Perfluorooctane Sulfonates (PFOS) *	N.D.			5 mg/kg
測試項目 Tested Item(s)	結果 Result		方法	檢出限 MDL
砷 Arsenic (As) *	N.D.			2 mg/kg
測試項目 Tested Item(s)	結果 Result		方法	檢出限 MDL
銻 Antimony (Sb) *	N.D.			2 mg/kg



報告編號 A2220056742101002E **Report No.** A2220056742101002E 第 7 頁 共 11 頁 Page 7 of 11

黑色固體 樣品/部位描述 Black solid **Sample/Part Description**

備註: 對於檢測鉛, 鎘, 汞, 銻, 砷, 鈹之樣品已消解完全。

- N.D. = 未檢出 (小於方法檢出限或定量限)

- mg/kg = ppm = 百萬分之一

-1000 mg/kg = 0.1%

-*=此項目的測試數據引自於報告A2220040646101002E。

The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury, Antimony, Remark:

Arsenic, Beryllium.

- MDL = Method Detection Limit

- N.D. = Not Detected (<MDL or LOQ)

- mg/kg = ppm = parts per million

-1000 mg/kg = 0.1%

- *=The test result(s) is/are presented in reference to the result(s) that reported in

A2220040646101002E.

注釋: 本報告中的資料結果供科研、教學、企業內部品質控制、企業產品研發等目的用。

The testing data and result(s) in this report is(are) just for scientific research, education, internal Note:

quality control and product development etc.

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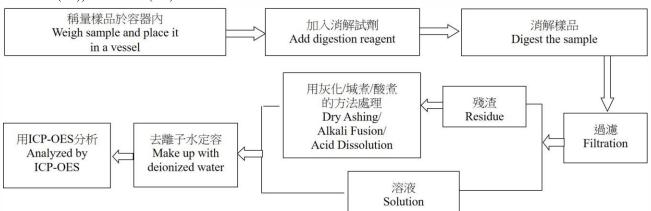


報告編號 A2220056742101002E **Report No.** A2220056742101002E 第 8 頁 共 11 頁 Page 8 of 11

檢測流程 Test Process

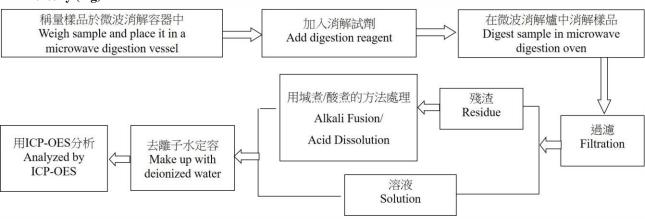
1. 鉛(Pb), 鎘(Cd)

Lead (Pb), Cadmium (Cd)

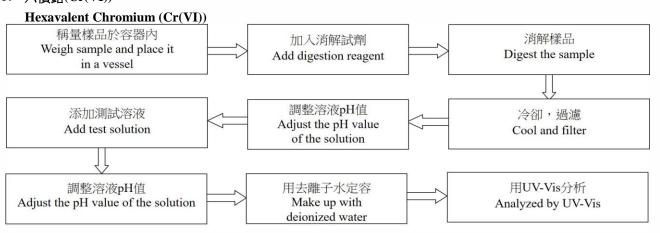


2. 汞(Hg)

Mercury (Hg)



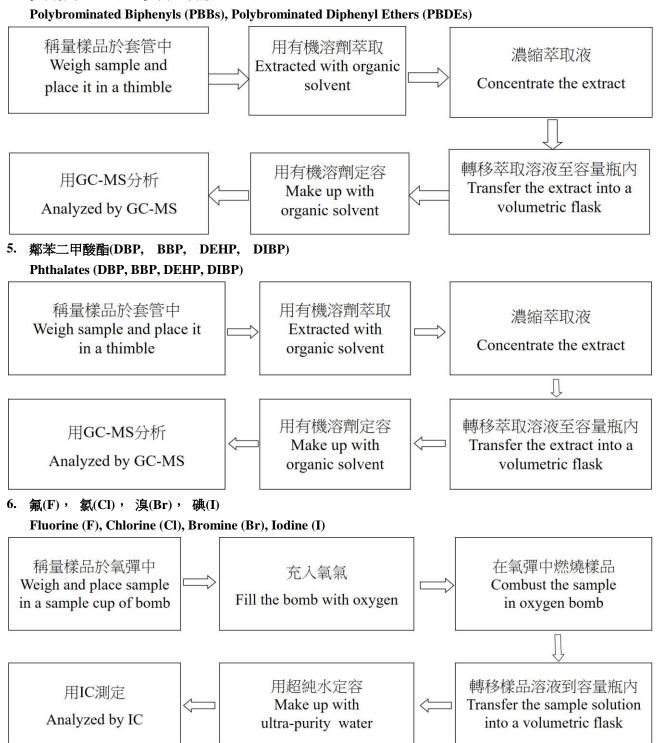
3. 六價鉻(Cr(VI))





報告編號 A2220056742101002E **Report No.** A2220056742101002E 第 9 頁 共 11 頁 Page 9 of 11

4. 多溴聯苯(PBBs), 多溴二苯醚(PBDEs)

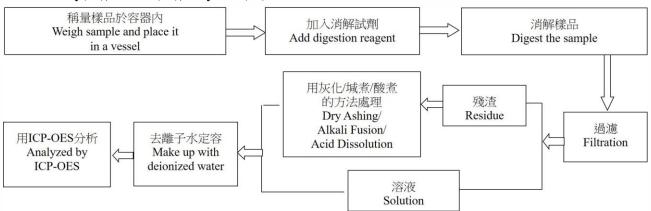




報告編號 A2220056742101002E **Report No.** A2220056742101002E 第 10 頁 共 11 頁 Page 10 of 11

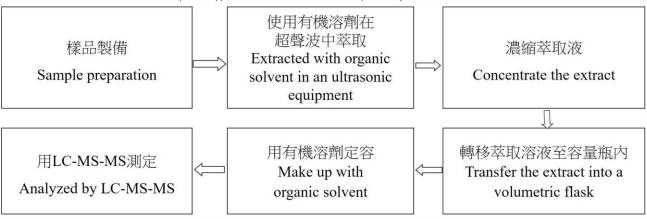
7. 銻(Sb), 砷(As), 鈹(Be)

Antimony(Sb), Arsenic(As), Beryllium(Be)



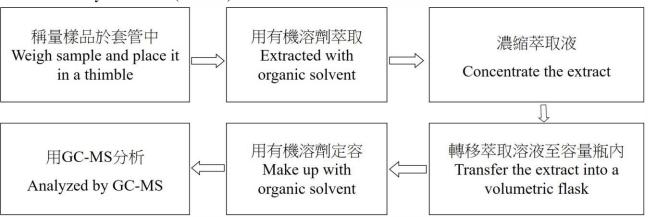
8. 全氟辛烷磺酸(PFOS), 全氟辛酸(PFOA)

Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA)



9. 六溴環十二烷(HBCDD)

Hexabromocyclododecane (HBCDD)





報告編號 A2220056742101002E **Report No.** A2220056742101002E 第 11 頁 共 11 頁 Page 11 of 11

樣品圖片 Photo(s) of the sample(s)



聲明Statement:

- 1. 檢測報告無批准人簽字、"專用章"及報告騎縫章無效;
 - This report is considered invalid without approved signature, special seal and the seal on the perforation;
- 2. 報告抬頭公司名稱及位址、樣品及樣品資訊由申請者提供,申請者應對其真實性負責,CTI未核實其 真實性;

The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;

- 3. 本報告檢測結果僅對受測樣品負責;
 - The result(s) shown in this report refer(s) only to the sample(s) tested;
- 4. 未經CTI書面同意,不得部分複製本報告;
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報告結束 *** End of report ***



Test Report

號碼(No.): ETR21C00177 日期(Date): 07-Dec-2021 頁數(Page): 1 of 15

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

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) : 惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION)

樣品名稱(Sample Name) : Tin PLATED COPPER WIRE (電鍍錫銅線)

收件日(Sample Receiving Date) : 01-Dec-2021

測試期間(Testing Period) : 01-Dec-2021 to 07-Dec-2021

測試需求(Test Requested) : (1) 依據客戶指定,參考RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863測試鎘、

鉛、汞、六價鉻、多溴聯苯醚, DBP, BBP, DEHP, DIBP。 (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP,

DEHP, DIBP contents in the submitted sample(s).)

(2) 其他測試項目請見下一頁。 (Please refer to next pages for the other item(s).)

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

結 論(Conclusion) : (1) 根據客戶所提供的樣品,其編、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP,

DEHP, DIBP的測試結果符合RoHS 2011/65/EU Annex II暨其修訂指令(EU) 2015/863之限值要求。 (Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the

limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive

2011/65/EU.)





PIN CODE: D417FAC4



Test Report

號碼(No.): ETR21C00177 日期(Date): 07-Dec-2021 頁數(Page): 2 of 15

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

測試部位敘述 (Test Part Description)

No.1 : 銀色金屬線鍍層 (PLATING LAYER OF SILVER COLORED METAL WIRE)
No.2 : 銀色金屬線底材 (BASE MATERIAL OF SILVER COLORED METAL WIRE)

No.3 : 銀色金屬線 (含鍍層) (SILVER COLORED METAL WIRE (INCLUDING THE PLATING LAYER))

測試結果 (Test Results)

測試項目	測試方法	單位	MDL	結果			限值
(Test Items)	(Method)	(Unit)			(Result)		(Limit)
				No.1	No.2	No.3	
鎘 (Cd) (Cadmium (Cd)) (CAS No.: 7440-43-9)	酸洗脫鍍層·參考IEC 62321-5: 2013·以感應耦合電漿發射光譜儀 分析。(IEC 62321-5: 2013 application of modified digestion by surface etching, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	-	-	100
鉛 (Pb) (Lead (Pb)) (CAS No.: 7439-92-1)	酸洗脫鍍層·參考IEC 62321-5: 2013·以感應耦合電漿發射光譜儀 分析。(IEC 62321-5: 2013 application of modified digestion by surface etching, analysis was performed by ICP-OES.)	mg/kg	2	15.2			1000
汞 (Hg) (Mercury (Hg)) (CAS No.: 7439-97-6)	酸洗脫鍍層·參考IEC 62321-4: 2013+ AMD1: 2017·以感應耦合 電漿發射光譜儀分析。(IEC 62321- 4: 2013+AMD1: 2017 application of modified digestion by surface etching, analysis was performed by ICP-OES.)	mg/kg	2	n.d.			1000
六價鉻 (Hexavalent Chromium) Cr(VI) (CAS No.: 18540-29-9) (#2)	參考IEC 62321-7-1: 2015 · 以紫外 光-可見光分光光度計分析。(With reference to IEC 62321-7-1: 2015, analysis was performed by UV-VIS.)	μg/cm²	0.1	n.d.	n.d.		-



Test Report

號碼(No.): ETR21C00177 日期(Date): 07-Dec-2021 頁數(Page): 3 of 15

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)			
(rest items)	(incariou)	(Onit)		No.1	No.2	No.3	(Limit)
鎘 (Cd) (Cadmium (Cd)) (CAS No.: 7440-43-9)	參考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.)	mg/kg	2		n.d.		100
鉛 (Pb) (Lead (Pb)) (CAS No.: 7439-92-1)	參考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.)	mg/kg	2		n.d.		1000
汞 (Hg) (Mercury (Hg)) (CAS No.: 7439-97-6)	參考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.)	mg/kg	2		n.d.		1000
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 層析儀/質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS.)	μg/m²	1	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 層析儀/質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS.)	μg/m²	1	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.		-



Test Report

號碼(No.): ETR21C00177 日

日期(Date): 07-Dec-2021

頁數(Page): 4 of 15

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

測試項目 (Test Items)	測試方法 (Mathad)	單位 (Unit)	MDL	結果 (Result)			限值 (Limit)
(Test items)	(Method)	(Unit)		No.1	No.2	No.3	(Limit)
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.		-
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)	參考IEC 62321-6: 2015,以氣相層	mg/kg	5			n.d.	-
多溴聯苯總和 (Sum of PBBs)	析儀/質譜儀分析。(With reference	mg/kg	-			n.d.	1000
一溴聯苯醚 (Monobromodiphenyl ether)	to IEC 62321-6: 2015, analysis	mg/kg	5			n.d.	-
二溴聯苯醚 (Dibromodiphenyl ether)	was 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)	1	mg/kg	5			n.d.	-
多溴聯苯醚總和 (Sum of PBDEs)		mg/kg	_			n.d.	1000



Test Report

號碼(No.): ETR21C00177 日期(Date): 07-Dec-2021

頁數(Page): 5 of 15

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

測試項目	測試方法	單位	MDL		結果		限值
(Test Items)	(Method)	(Unit)			(Result)		(Limit)
				No.1	No.2	No.3	
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl		mg/kg	50			n.d.	1000
benzyl phthalate (BBP)) (CAS No.:							
85-68-7)							
鄰苯二甲酸二丁酯 (DBP) (Dibutyl		mg/kg	50			n.d.	1000
phthalate (DBP)) (CAS No.: 84-							
74-2)							
鄰苯二甲酸二(2-乙基己基)酯		mg/kg	50			n.d.	1000
(DEHP) (Di-(2-ethylhexyl)							
phthalate (DEHP)) (CAS No.: 117-							
81-7)							
鄰苯二甲酸二異丁酯 (DIBP)	參考IEC 62321-8: 2017,以氣相層	mg/kg	50			n.d.	1000
(Diisobutyl phthalate (DIBP)) (CAS	析儀/質譜儀分析。(With reference	3 3					
No.: 84-69-5)	to IEC 62321-8: 2017, analysis						
鄰苯二甲酸二異癸酯 (DIDP)	was performed by GC/MS.)	mg/kg	50			n.d.	-
(Diisodecyl phthalate (DIDP))		3. 3					
(CAS No.: 26761-40-0, 68515-49-							
1)							
鄰苯二甲酸二異壬酯 (DINP)		mg/kg	50			n.d.	-
(Diisononyl phthalate (DINP))		5, 5					
(CAS No.: 28553-12-0, 68515-48-							
0)							
鄰苯二甲酸二正辛酯 (DNOP) (Di-		mg/kg	50			n.d.	-
n-octyl phthalate (DNOP)) (CAS		3, 3					
No.: 117-84-0)							
氟 (F) (Fluorine (F)) (CAS No.:		mg/kg	50			n.d.	_
14762-94-8)		9,9					
氯 (Cl) (Chlorine (Cl)) (CAS No.:	↓ 参考BS EN 14582: 2016,以離子	mg/kg	50			n.d.	_
22537-15-1)	層析儀分析。(With reference to	1119, 119	30			11.0.	
溴 (Br) (Bromine (Br)) (CAS No.:	BS EN 14582: 2016, analysis was	mg/kg	50			n.d.	_
10097-32-2)	performed by IC.)	9, 1.9				11.0.	
碘 (I) (Iodine (I)) (CAS No.: 14362-	J. 2	mg/kg	50			n.d.	_
44-8)		9, 1.9				11.0.	



Test Report

號碼(No.): ETR21C00177 日期(Date): 07-Dec-2021 頁數(Page): 6 of 15

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

測試項目	測試方法	單位	MDL		結果		限值
(Test Items)	(Method)	(Unit)			(Result)		(Limit)
				No.1	No.2	No.3	
鈹 (Be) (Beryllium (Be)) (CAS No.:	參考US EPA 3050B: 1996·以感應	mg/kg	2			n.d.	-
7440-41-7)	耦合電漿發射光譜儀分析。(With						
	reference to US EPA 3050B: 1996,						
	analysis was performed by ICP-						
	OES.)						

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); 小於MDL / Less than MDL
- 4. "-" = Not Regulated (無規格值)
- 5. "---" = Not Conducted (未測試項目)
- 6. 全氟辛烷磺酸及其鹽類包含 (PFOS and its salts including):

CAS No.: 29081-56-9, 2795-39-3, 29457-72-5, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7.

- 7. 全氟辛酸及其鹽類包含 (PFOA and its salts including):
 - CAS No.: 3825-26-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0.
- 8. (#2) =
 - a. 當六價鉻結果大於0.13 μg/cm²,表示樣品表層含有六價鉻。(The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 μg/cm². The sample coating is considered to contain Cr(VI).)
 - b. 當六價鉻結果為n.d. (濃度小於0.10 μg/cm²),表示表層不含六價鉻。(The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10 μg/cm²). The coating is considered a non-Cr(VI) based coating)
 - c. 當六價鉻結果介於 0.10 及 0.13 $\mu g/cm^2$ 時,無法確定塗層是否含有六價鉻。(The result between 0.10 $\mu g/cm^2$ and 0.13 $\mu g/cm^2$ is considered to be inconclusive unavoidable coating variations may influence the determination.)
- 9. 符合性結果之判定係以測試結果與限值做比較。(The statement of compliance conformity is based on comparison of testing results and limits.)



Test Report

號碼(No.): ETR21C00177

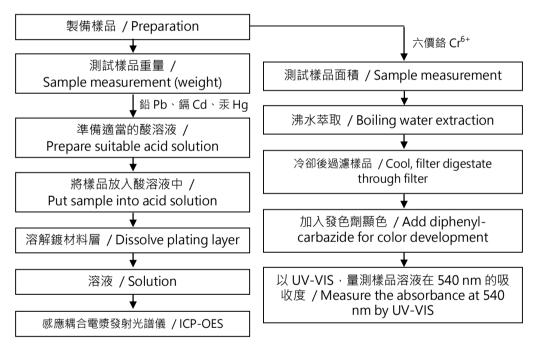
日期(Date): 07-Dec-2021

頁數(Page): 7 of 15

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

鍍層重金屬測試流程圖 / Flow Chart of Stripping method for metal analysis

根據以下的流程圖之條件,樣品之外部鍍層已完全溶解。(六價鉻測試方法除外) / The plating layer of samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)





Test Report

號碼(No.): ETR21C00177 日期(Date): 07-Dec-2021

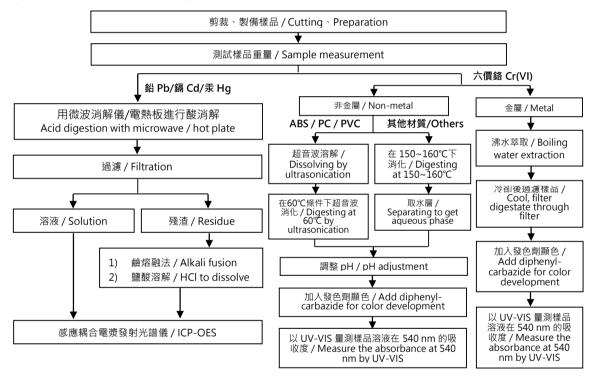
頁數(Page): 8 of 15

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

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

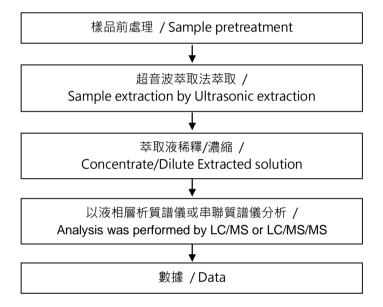
號碼(No.): ETR21C00177

日期(Date): 07-Dec-2021

頁數(Page): 9 of 15

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

全氟辛酸/全氟辛烷磺酸分析流程圖 / Analytical flow chart - PFOA/PFOS



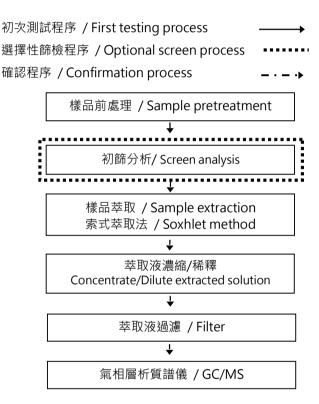


Test Report

號碼(No.): ETR21C00177 日期(Date): 07-Dec-2021

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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): 10 of 15



Test Report

號碼(No.): ETR21C00177 日期(Date): 07-Dec-2021

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

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

【測試方法/Test method: IEC 62321-8】

樣品前處理/分樣 / Sample pretreatment/separation

樣品以 THF 四氫呋喃溶解萃取 / Sample dissolved/extracted by THF

萃取液稀釋 / Dilute extracted solution

氣相層析質譜儀分析 / Analysis was performed by GC/MS

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頁數(Page): 11 of 15



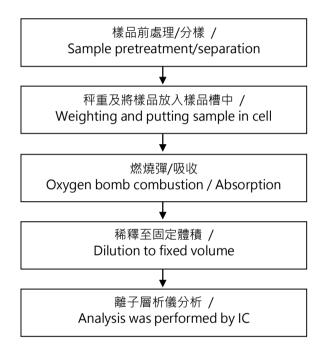
Test Report

號碼(No.): ETR21C00177 日期(

日期(Date): 07-Dec-2021

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

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



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頁數(Page): 12 of 15



Test Report

號碼(No.): ETR21C00177

日期(Date): 07-Dec-2021

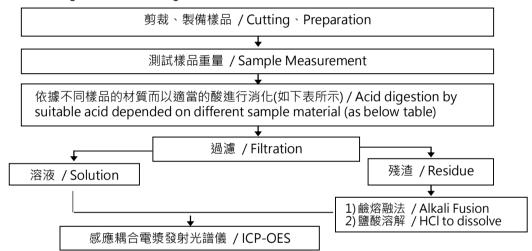
頁數(Page): 13 of 15

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

元素以 ICP-OES 分析的消化流程圖

(Flow Chart of digestion for the elements analysis performed by ICP-OES)

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.



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 /
	Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂
玻璃 / Glass	硝酸,氫氟酸 / HNO₃/HF
金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO₃
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCI
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion



Test Report

號碼(No.): ETR21C00177 日期(Date): 07-Dec-2021 頁數(Page): 14 of 15

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

* 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.)

ETR21C00177 NO.1



ETR21C00177 NO.2





Test Report

號碼(No.): ETR21C00177 日期(Date): 07-Dec-2021

惠豐特殊電線股份有限公司 (WELL FORE SPECIAL WIRE CORPORATION) 桃園市中壢區自強七路10號 (NO. 10, ZIQIANG 7TH RD., ZHONGLI DIST., TAOYUAN CITY, TAIWAN)

ETR21C00177 NO.3



** 報告結尾 (End of Report) **

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頁數(Page): 15 of 15



No.: ETR21905566 Date: 04-Oct-2021

SHAW HUOW ENTERPRISE CO., LTD.

NO. 39-1, WUSYUN ST., ANLE DISTRICT, KEELUNG CITY, TAIWAN

The following sample(s) was/were submitted and identified by/on behalf of the applicant as:

SHAW HUOW ENTERPRISE CO., LTD. Sample Submitted By

Sample Name **EPOXY RESIN ADHESIVE**

Style/Item No. S-7000. 7100. 7200. 7300. 7400. 7500. 7600. 7700. 7800. 7900. @1~10. AB. AG.

FHL. F. L. LA. LB. H. S. W. G. HF. FL

Sample Receiving Date

27-Sep-2021

Testing Period

27-Sep-2021 to 04-Oct-2021

Test Requested

(1) As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).

(2) Please refer to next pages for the other item(s).

Test Results

Please refer to following pages.

Conclusion

(1) Based on the performed tests on submitted sample(s), the test results of

Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive

2011/65/EU.





Page: 1 of 12



No.: ETR21905566 Date: 04-Oct-2021

SHAW HUOW ENTERPRISE CO., LTD.
NO. 39-1, WUSYUN ST., ANLE DISTRICT, KEELUNG CITY, TAIWAN

Test Part Description

No.1 : BLACK PASTE

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Cadmium (Cd) (CAS No.: 7440-43-9)	With reference to IEC 62321-5: 2013,	mg/kg	2	n.d.	100
	analysis was performed by ICP-OES.				
Lead (Pb) (CAS No.: 7439-92-1)	With reference to IEC 62321-5: 2013,	mg/kg	2	n.d.	1000
	analysis was performed by ICP-OES.				
Mercury (Hg) (CAS No.: 7439-97-6)	With reference to IEC 62321-4: 2013+	mg/kg	2	n.d.	1000
	AMD1: 2017, analysis was performed				
	by ICP-OES.				
Hexavalent Chromium Cr(VI) (CAS No.:	With reference to IEC 62321-7-2:	mg/kg	8	n.d.	1000
18540-29-9)	2017, analysis was performed by UV-				
	VIS.				
Monobromobiphenyl		mg/kg	5	n.d.	-
Dibromobiphenyl	mg/kg mg/kg mg/kg mg/kg	mg/kg	5	n.d.	-
Tribromobiphenyl		mg/kg	5	n.d.	-
Tetrabromobiphenyl		mg/kg	5	n.d.	-
Pentabromobiphenyl		mg/kg	5	n.d.	-
Hexabromobiphenyl		mg/kg	5	n.d.	-
Heptabromobiphenyl		mg/kg	5	n.d.	-
Octabromobiphenyl		mg/kg	5	n.d.	-
Nonabromobiphenyl		mg/kg	5	n.d.	-
Decabromobiphenyl		mg/kg	5	n.d.	-
Sum of PBBs	With reference to IEC 62321-6: 2015,	mg/kg	ı	n.d.	1000
Monobromodiphenyl ether	analysis was performed by GC/MS.	mg/kg	5	n.d.	ı
Dibromodiphenyl ether		mg/kg	5	n.d.	-
Tribromodiphenyl ether		mg/kg	5	n.d.	-
Tetrabromodiphenyl ether		mg/kg	5	n.d.	-
Pentabromodiphenyl ether		mg/kg	5	n.d.	-
Hexabromodiphenyl ether		mg/kg	5	n.d.	-
Heptabromodiphenyl ether		mg/kg	5	n.d.	-
Octabromodiphenyl ether		mg/kg	5	n.d.	-
Nonabromodiphenyl ether		mg/kg	5	n.d.	-
Decabromodiphenyl ether		mg/kg	5	n.d.	-
Sum of PBDEs		mg/kg	-	n.d.	1000

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Page: 2 of 12



No.: ETR21905566 Date: 04-Oct-2021

SHAW HUOW ENTERPRISE CO., LTD.
NO. 39-1, WUSYUN ST., ANLE DISTRICT, KEELUNG CITY, TAIWAN

Test Item(s)	Method	Unit	MDL	Result No.1	Limit
Butyl benzyl phthalate (BBP) (CAS No.: 85-68-7)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Dibutyl phthalate (DBP) (CAS No.: 84-74-2)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Di-(2-ethylhexyl) phthalate (DEHP) (CAS No.: 117-81-7)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Diisobutyl phthalate (DIBP) (CAS No.: 84-69-5)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Diisodecyl phthalate (DIDP) (CAS No.: 26761-40-0, 68515-49-1)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	-
Diisononyl phthalate (DINP) (CAS No.: 28553-12-0, 68515-48-0)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	-
Di-n-octyl phthalate (DNOP) (CAS No.: 117-84-0)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	=-
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))	With reference to IEC 62321: 2008, analysis was performed by GC/MS.	mg/kg	5	n.d.	-
Fluorine (F) (CAS No.: 14762-94-8)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.	-
Chlorine (Cl) (CAS No.: 22537-15-1)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	484	-
Bromine (Br) (CAS No.: 10097-32-2)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.	-
lodine (I) (CAS No.: 14362-44-8)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.	-
PFOS and its salts (CAS No.: 1763-23-1 and its salts)	With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
PFOA and its salts (CAS No.: 335-67-1 and its salts)	With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Arsenic (As) (CAS No.: 7440-38-2)	With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.	mg/kg	2	n.d.	-

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Page: 3 of 12



No.: ETR21905566 Date: 04-Oct-2021

SHAW HUOW ENTERPRISE CO., LTD.
NO. 39-1, WUSYUN ST., ANLE DISTRICT, KEELUNG CITY, TAIWAN

Note:

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. MDL = Method Detection Limit
- 3. n.d. = Not Detected (Less than MDL)
- 4. "-" = Not Regulated
- 5. PFOS and its salts including:

CAS No.: 29081-56-9, 2795-39-3, 29457-72-5, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7.

- 6. PFOA and its salts including:
 - CAS No.: 3825-26-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0.
- 7. The statement of compliance conformity is based on comparison of testing results and limits.

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Page: 4 of 12



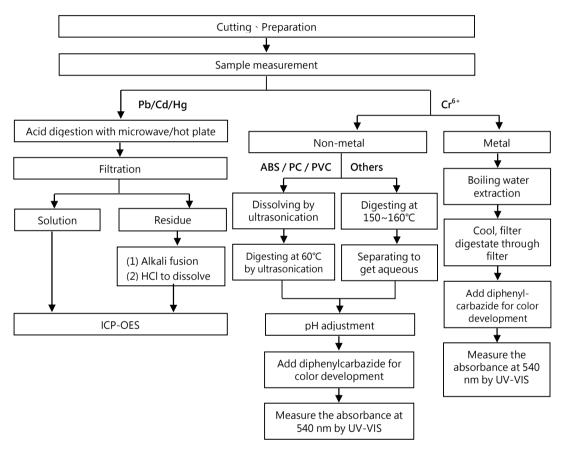
No.: ETR21905566 Date: 04-Oct-2021

SHAW HUOW ENTERPRISE CO., LTD.
NO. 39-1, WUSYUN ST., ANLE DISTRICT, KEELUNG CITY, TAIWAN

Analytical flow chart of Heavy Metal

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

(Cr^{6+} test method excluded)



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Page: 5 of 12



No.: ETR21905566

Date: 04-Oct-2021

Page: 6 of 12

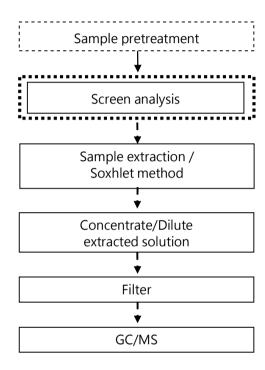
SHAW HUOW ENTERPRISE CO., LTD.
NO. 39-1, WUSYUN ST., ANLE DISTRICT, KEELUNG CITY, TAIWAN

Analytical flow chart - PBBs / PBDEs

First testing process

Optional screen process

Confirmation process



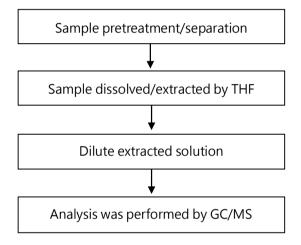


No.: ETR21905566 Date: 04-Oct-2021

SHAW HUOW ENTERPRISE CO., LTD.
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Analytical flow chart - Phthalate

[Test method: IEC 62321-8]



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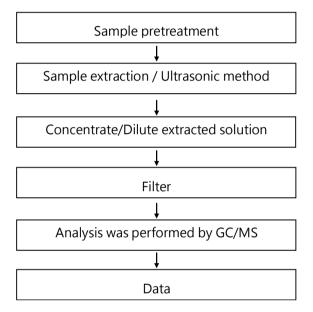
Page: 7 of 12



No.: ETR21905566 Date: 04-Oct-2021

SHAW HUOW ENTERPRISE CO., LTD.
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Analytical flow chart - HBCDD



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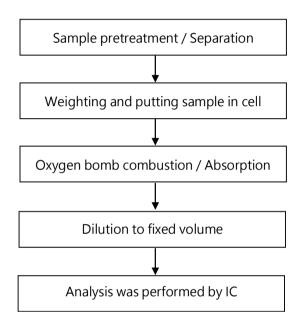
Page: 8 of 12



No.: ETR21905566 Date: 04-Oct-2021

SHAW HUOW ENTERPRISE CO., LTD.
NO. 39-1, WUSYUN ST., ANLE DISTRICT, KEELUNG CITY, TAIWAN

Analytical flow chart - Halogen



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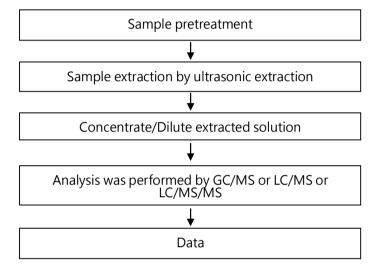
Page: 9 of 12



No.: ETR21905566 Date: 04-Oct-2021

SHAW HUOW ENTERPRISE CO., LTD.
NO. 39-1, WUSYUN ST., ANLE DISTRICT, KEELUNG CITY, TAIWAN

Analytical flow chart - PFAS (including PFOA/PFOS/its related compound, etc.)



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Page: 10 of 12



No.: ETR21905566

Date: 04-Oct-2021

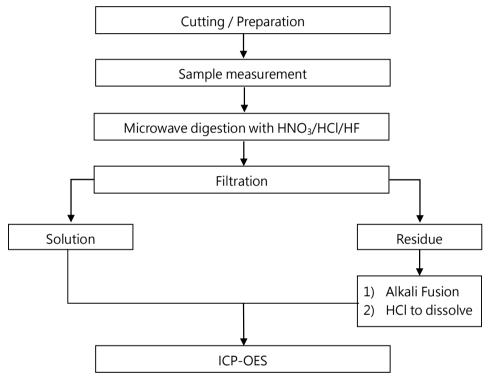
Page: 11 of 12

SHAW HUOW ENTERPRISE CO., LTD.
NO. 39-1, WUSYUN ST., ANLE DISTRICT, KEELUNG CITY, TAIWAN

Analytical flow chart of Elements (Heavy Metal included)

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

【Reference method: US EPA 3051A \ US EPA 3052】



* US EPA 3051A method does not add HF.



No.: ETR21905566

Date: 04-Oct-2021

Page: 12 of 12

SHAW HUOW ENTERPRISE CO., LTD.
NO. 39-1, WUSYUN ST., ANLE DISTRICT, KEELUNG CITY, TAIWAN

* The tested sample / part is marked by an arrow if it's shown on the photo. *

ETR21905566



** End of Report **