

## **Test Report**

日期(Date): 13-Nov-2020 頁數(Page): 1 of 16 號碼(No.): ETR20B01091

精奕興業股份有限公司 (Y.Y. CABLE ACCESSORIES CO., LTD.) 台灣台南市安南區安新二路209號 (209, ANXIN 2ND RD., ANNAN DIST., TAINAN 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)

精奕興業股份有限公司 (Y.Y. CABLE ACCESSORIES CO., LTD.)

樣品名稱(Sample Name) 樣品材質(Sample Material) 同材質/產品名稱/型號(Same NYLON 6/6 CABLE TIES (尼龍6/6束帶) 94V-2, BLACK, NYLON 6/6黑色, 尼龍6/6 請參考第2頁 (PLEASE REFE TO PAGE 2)

Material/Sample

Description/Style/Item No.)

\_\_\_\_\_\_

收件日(Sample Receiving Date)

06-Nov-2020

測試期間(Testing Period)

06-Nov-2020 to 13-Nov-2020

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、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) 依據客戶指定,測試 PAHs 及其他測項。 (As specified by client, to test PAHs and other item(s).)

測試結果(Test Results)

請參閱下一頁 (Please refer to following pages.)

論(Conclusion) 結

根據客戶所提供的樣品,其鎘、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.)

Signed for and on behalt SGS TAIWAN LTD.

Chemical Laboratory - Taipei





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同材質/產品名稱/型號 (Same Material/Sample Description/Style/Item No.):

94V-2, BLACK, NYLON6/6: 黑色, 尼龍6/6, CABLE TIES (TSL TYPE) 尼龍束帶, CABLE TIES (UVT TYPE) 抗紫外線束帶, CABLE TIES (HST TYPE) 耐溫型束帶, MOUNTING CABLE TIES (MHT TYPE) 圓頭鎖式束帶, RELEASABLE TIES (RT TYPE) 可鬆開式束帶, LOW PROFILE CABLE TIES (LPT TYPE) 平拉式束带, DOUBLE LOOP CABLE TIES (DH TYPE) 雙頭鎖式束帶, PUSH MOUNT TIES (PT & PMT TYPE) 插鞘式束带, HEAT STABILIZED TIE WITH TREE MOUNT 耐溫型束帶含插鞘固定座, HEAT STABILIZED FIR TREE MOUNT 耐溫型插鞘固定座, SELF-ADHESIVE TIE MOUNTS (SDM TYPE) 粘式固定座, SADDLE TYPE TIE MOUNTS (STM TYPE) 馬蹄型固定座, CABLE CLAMP (CC TYPE) 配線固定鈕, MANSONRY PUSH MOUNTS (MPM TYPE) 壁虎固定座, HOLE PLUGS (HP TYPE) 扣式塞頭, SNAP BUSHING (OCB, SB TYPE) 扣式護線環, SELF ADHESIVE CABLE CLAMP (AWC, ACC TYPE) 配線固定座, STRAIN-RELIEF BUSHINGS (SRB TYPE) 電源線扣, NYLON CABLE GLAND (PG/MM/NPT TYPE) 電纜固定頭, TWIST LOCK (TL TYPE) 扭式束線扣, CABLE MARKER STRIP (CMS) 標誌靶



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### 測試部位敘述 (Test Part Description)

No.1 : 黑色塑膠 (BLACK PLASTIC)

#### 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	
鎘 (Cd) (Cadmium (Cd)) (CAS No.: 7440-	參考IEC 62321-5: 2013·以感應耦合電漿	mg/kg	2	n.d.	100
43-9)	發射光譜儀分析。(With reference to IEC				
	62321-5: 2013, analysis was performed				
	by ICP-OES.)				
鉛 (Pb) (Lead (Pb)) (CAS No.: 7439-92-1)	參考IEC 62321-5: 2013,以感應耦合電漿	mg/kg	2	n.d.	1000
	發射光譜儀分析。(With reference to IEC				
	62321-5: 2013, analysis was performed				
	by ICP-OES.)				
汞 (Hg) (Mercury (Hg)) (CAS No.: 7439-	參考IEC 62321-4: 2013+ AMD1: 2017,	mg/kg	2	n.d.	1000
97-6)	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.)				
六價鉻 Cr(VI) (Hexavalent Chromium	參考IEC 62321-7-2: 2017,以紫外光-可見	mg/kg	8	n.d.	1000
Cr(VI)) (CAS No.: 18540-29-9)	光分光光度計分析。(With reference to				
	IEC 62321-7-2: 2017, analysis was				
	performed by UV-VIS.)				
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-		mg/kg	50	n.d.	-
8)					
氯 (CI) (Chlorine (CI)) (CAS No.: 22537-	]  参考BS EN 14582: 2016·以離子層析儀分	mg/kg	50	n.d.	-
15-1)					
溴 (Br) (Bromine (Br)) (CAS No.: 10097-	析。(With reference to BS EN 14582:	mg/kg	50	n.d.	-
32-2)	2016, analysis was performed by IC.)				
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)		mg/kg	50	2780	-



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



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(Test Items)	(Method)	(Unit)		(Result)	(Limit)
				No.1	
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl		mg/kg	50	n.d.	1000
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 (DEHP) (Di-		mg/kg	50	n.d.	1000
(2-ethylhexyl) phthalate (DEHP)) (CAS					
No.: 117-81-7)					
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl		mg/kg	50	n.d.	1000
phthalate (DIBP)) (CAS No.: 84-69-5)	參考IEC 62321-8: 2017 · 以氣相層析儀/質				
鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl	譜儀分析。(With reference to IEC 62321-	mg/kg	50	n.d.	-
phthalate (DIDP)) (CAS No.: 26761-40-	8: 2017, analysis was performed by				
0, 68515-49-1)	GC/MS.)				
鄰苯二甲酸二異壬酯 (DINP) (Diisononyl		mg/kg	50	n.d.	-
phthalate (DINP)) (CAS No.: 28553-12-					
0, 68515-48-0)					
鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl		mg/kg	50	n.d.	-
phthalate (DNOP)) (CAS No.: 117-84-0)					
鄰苯二甲酸二正己酯 (Di-n-hexyl		mg/kg	50	n.d.	-
phthalate) (CAS No.: 84-75-3)					
六溴環十二烷及所有主要被辨別出的異構		mg/kg	5	n.d.	-
物(HBCDD) (α- HBCDD, β- HBCDD, γ-					
HBCDD) (Hexabromocyclododecane	參考IEC 62321: 2008,以氣相層析儀/質譜				
(HBCDD) and all major	儀分析。(With reference to IEC 62321:				
diastereoisomers identified ( $\alpha$ - HBCDD,	2008, analysis was performed by				
β- HBCDD, γ- HBCDD)) (CAS No.:	GC/MS.)				
25637-99-4, 3194-55-6 (134237-51-7,					
134237-50-6, 134237-52-8))					



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測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
夕严艺禾炣 (Dalveyelie Averantie				No.1	
多環芳香烴 (Polycyclic Aromatic Hydrocarbons) (PAHs)					
苯駢(a)芘 (Benzo[a]pyrene) (CAS No.:		ma/ka	0.2	n.d.	_
50-32-8)		mg/kg	0.2	n.a.	-
苯駢(e)芘 (Benzo[e]pyrene) (CAS No.:		mg/kg	0.2	n.d.	
192-97-2)					
苯駢蒽 (Benzo[a]anthracene) (CAS No.:		mg/kg	0.2	n.d.	-
56-55-3)		/1	0.2	l	
苯(b)苯駢芴 (Benzo[b]fluoranthene) (CAS No.: 205-99-2)		mg/kg	0.2	n.d.	-
苯(j)苯駢芴 (Benzo[j]fluoranthene) (CAS		mg/kg	0.2	n.d.	_
No.: 205-82-3)		mg/kg	0.2	11.0.	
苯(k)苯駢芴 (Benzo[k]fluoranthene)		mg/kg	0.2	n.d.	-
(CAS No.: 207-08-9)	參考AfPS GS 2019:01 PAK · 以氣相層析儀				
菌 (Chrysene) (CAS No.: 218-01-9)	/質譜儀分析。(With reference to AfPS GS	mg/kg	0.2	n.d.	-
二苯駢蒽 (Dibenzo[a,h]anthracene)	2019:01 PAK, analysis was performed by	mg/kg	0.2	n.d.	-
(CAS No.: 53-70-3)	GC/MS.)				
苯駢菲 (Benzo[g,h,i]perylene) (CAS No.:		mg/kg	0.2	n.d.	-
191-24-2)					
茚酮芘 (Indeno[1,2,3-c,d]pyrene) (CAS		mg/kg	0.2	n.d.	-
No.: 193-39-5)					
蒽 (Anthracene) (CAS No.: 120-12-7)		mg/kg	0.2	n.d.	-
苯駢芴 (Fluoranthene) (CAS No.: 206-		mg/kg	0.2	n.d.	-
44-0)					
菲 (Phenanthrene) (CAS No.: 85-01-8)		mg/kg	0.2	n.d.	-
芘 (Pyrene) (CAS No.: 129-00-0)		mg/kg	0.2	n.d.	-
萘 (Naphthalene) (CAS No.: 91-20-3)		mg/kg	0.2	n.d.	-
多環芳香烴15項總和 (Sum of 15 PAHs)		mg/kg	-	n.d.	Δ



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測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
聚氯乙烯 (Polyvinyl chloride) (PVC)	參考ASTM E1252: 2013 · 以傅立葉轉換紅外線光譜儀及焰色法分析。(With reference to ASTM E1252: 2013, analysis was performed by FT-IR and Flame Test.)		1	Negative	-

### 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. \*\*= Qualitative analysis (No Unit) 定性分析(無單位)
- 6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
- 7. 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.)



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### △ 德國產品安全委員會(AfPS): GS PAHs 要求

AfPS (German commission for Product Safety): GS PAHs requirements

	第1類(Category 1)	第2類(Cate	第 2 類(Category 2) 第 3 類(Category 3)			
項目 (Parameter)	材料和 3 歲以下兒童使用的 產品(Materials intended to be placed in the mouth, or materials in toys (Directive 2009/48/EC) or articles	不屬於第 1 類的材料·並意圖或可預見與皮膚接觸逾 30 秒(長期皮膚接觸)或重複的短時間接觸		不屬於第 1 類或第 2 類的材料·並意圖或可預見與皮膚接觸不超過 30 秒(短期皮膚接觸)(Materials not covered by Category 1 or 2, with intended or foreseeable short-term skin contact (≦ 30 seconds))		
	for children up to 3 years of age with intended long-term skin contact (> 30 seconds))	a. 供 14 歲以下兒童 使用的產品(Use by children under 14)	b. 其它產品 (Other consumer products)	a. 供 14 歲以下兒童 使用的產品(Use by children under 14)	b. 其它產品 (Other consumer products)	
Naphthalene	< 1	< 2		< 10		
Phenanthrene						
Anthracene	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum	
Fluoranthene	\ I Sulli	< 3 3dill	\ 10 3uiii	< 20 Julii	< 50 3um	
Pyrene						
Benzo[a]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Chrysene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[b]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[j]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[k]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[a]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[e]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Indeno[1,2,3-c,d] pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Dibenzo[a,h]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[g,h,i]perylene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
15 項 PAH 總濃度 (Sum of 15 PAH)	<1	< 5	< 10	< 20	< 50	

單位(Unit):mg/kg



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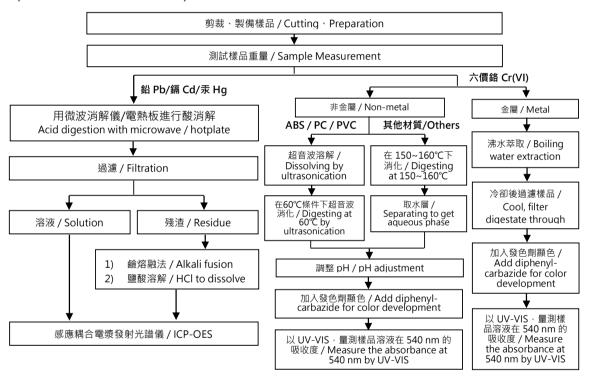
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### 重金屬流程圖 / Analytical flow chart of Heavy Metal

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)





# 測試報告 Test Report

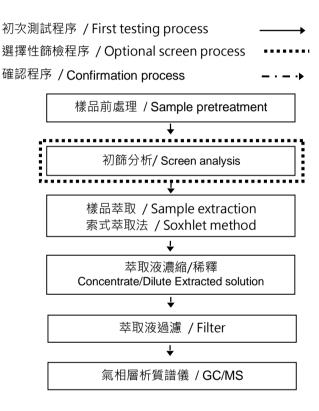
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#### 多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs





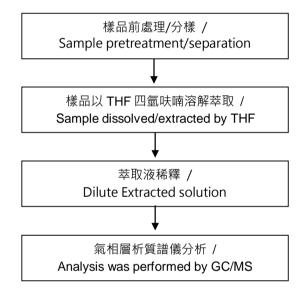
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#### 可塑劑分析流程圖 / Analytical flow chart - Phthalate

#### 【測試方法/Test method: IEC 62321-8】





# 測試報告 Test Report

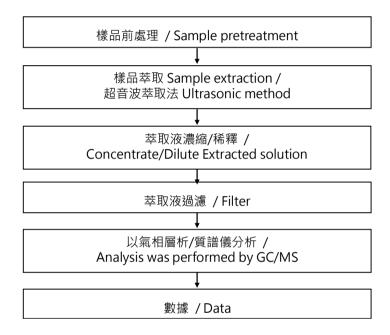
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#### 六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD



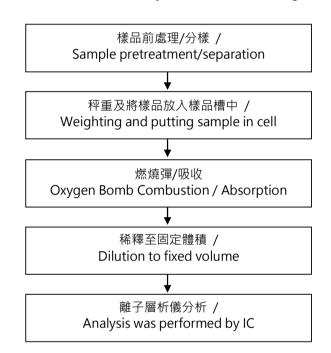


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### 鹵素分析流程圖 / Analytical flow chart - Halogen



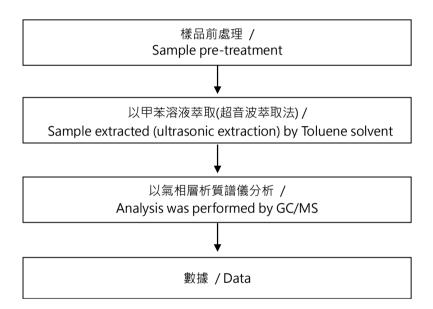


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### 多環芳香烴分析流程圖 / Analytical flow chart - PAHs (Polycyclic Aromatic Hydrocarbons)



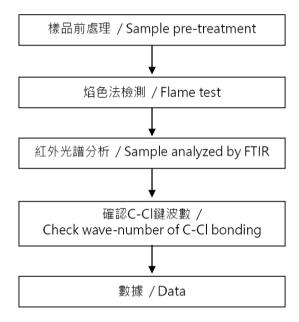


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### 聚氯乙烯物質判定分析流程圖 / Analysis flow chart - PVC





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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.)

### ETR20B01091



\*\* 報告結尾 (End of Report) \*\*