亞 驪 企 業 股 份 有 限 公 司
ARISTOTLE ENTERPRISES

承 認 申 請 書

ROHS COMPLIANCE

客戶名稱: Customer	台達電子工業股份有限公司
廠商料號: Part No.	RFA-BT-AP303-79B-80
品名: Description	L=80mm
圖號: Drawing No.	RFA-BT-AP303-79B-80
客戶料號: Drawing No.	

出廠簽章:

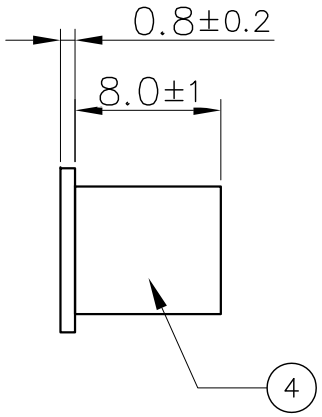
檢　　查 TEST BY	核　　對 CHECK BY	承　　認 APPROVE BY
方美鑾	傅千玲	廖煥文

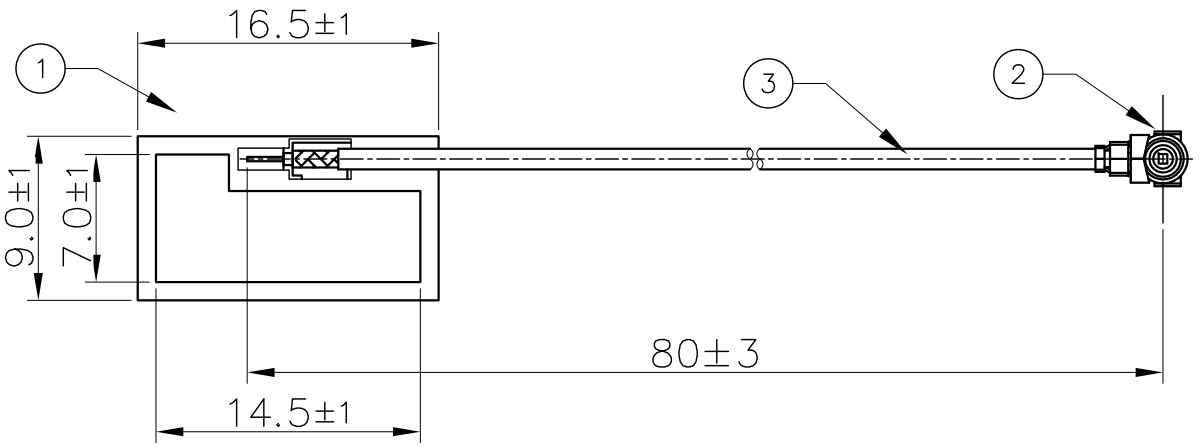
承認簽章:

檢　　查 TEST BY	核　　對 CHECK BY	承　　認 APPROVE BY

地址:新北市中和區莒光路 63 號 8 樓
電話:02-2225-8209
傳真:02-2225-7523

NO.	NAME	FINSH	MAT'L	Q'TY	MEMO
1.	PCB	BLACK	FR4	1	
2.	IPEX	GOLD PLATED	PHOSPHOR BRONZE	1	MHF1
3.	Cable	BLACK	--	1	ø1.37
4.	雙面泡綿背膠	BLACK	--	1	





PROJECTION	TOLERANCE UNLESS OTHERWISE SPECIFIED		亞驪企業股份有限公司 ARISTOTLE ENTERPRISES INC.
	LINER	ANGLE	
UNITS	.X ±1.0	X° ±5°	
MM	.XX ±0.5		TITLE
	.XXX ±0.2		RFA-BT-AP303-79B-80

REV.	ECN.	NAME	DATE						DWG NO.
3.				REV.	B				RFA-BT-AP303-79B-80
2.				SHEET	1/1	CHKD.			
1.				SIZE	SCALE				
REV.	ECN.	NAME	DATE	A4	1:1	DRAW	Gino	20240304	

(0,0)

亞驪企業股份有限公司
ARISTOTLE ENTERPRISES INC.

FAI Report

客戶簡稱	C492	客戶料號		亞驪料號	RFA-BT-AP303-79B-80

項次	測量點	1	2	3	判定	備註
1	16.5±1	16.5	16.5	16.02	V	
2	14.5±1	14.5	14.52	14.55	V	
3	80±3	80.5	80.15	80.01	V	
4	9.0±1	9.0	9.06	9.07	V	
5	7.0±1	7.05	7.06	7.0	V	
6	8.0±1	8.01	8.02	8.02	V	
7	0.8±0.2	0.82	0.84	0.82	V	

備註：

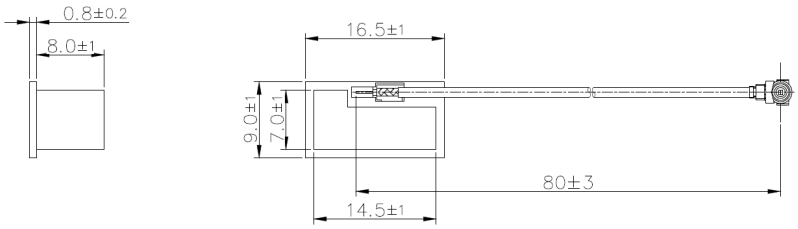
ARISTOTLE ENTERPRISES INC.

Specifications

RFA-BT-AP303-79B-80

Electrical Specifications

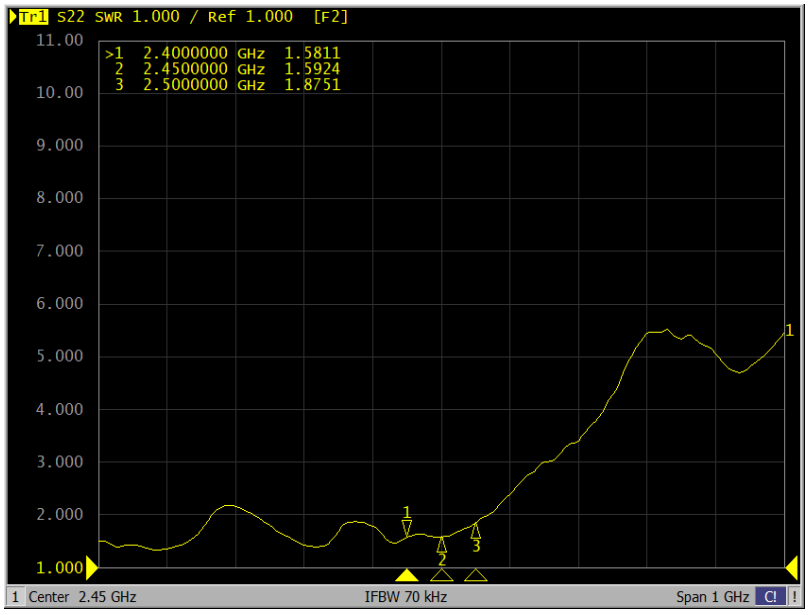
Frequency range	2400-2500 MHz
Peak gain	2.88 dBi
Average gain	-3.24 dBi
Efficiency	51.15 %
VSWR	2.5 : 1 Max.
Impedance	50 Ω
Polarization	Linear, vertical
Cable	Ø 1.37 , L=80mm



Environmental & Mechanical Characteristics

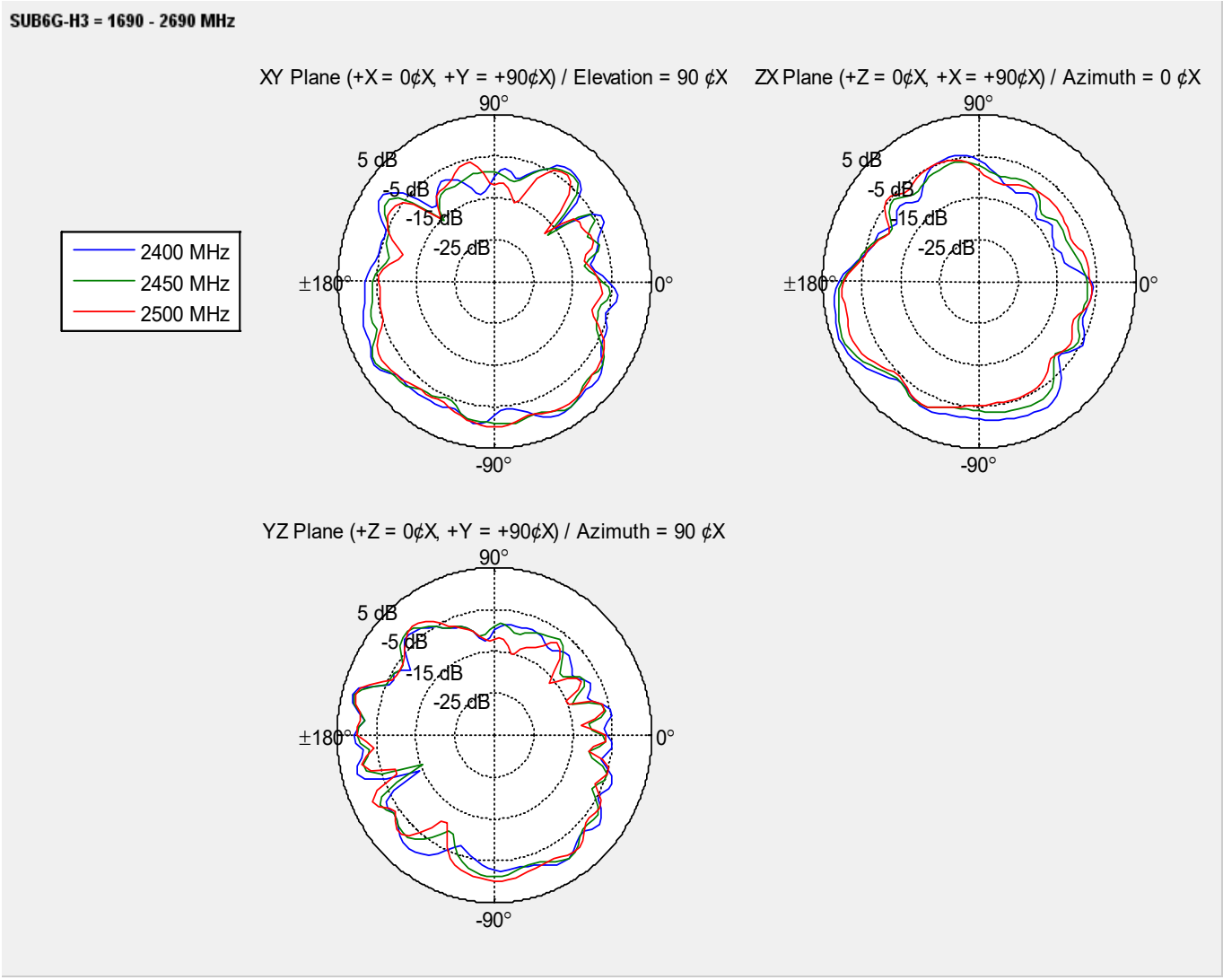
Operating temperature	- 40℃ to +70℃
Humidity	95% @ 25℃

VSWR



ARISTOTLE
8F, No.63, Juguang Rd, Zhonghe Dist, New Taipei City 235, Taiwan, R.O.C.
Tel : +886-2-2225-8209 Fax: +886-2-2225-7523 www.aristotle.com.tw

Radiation Pattern



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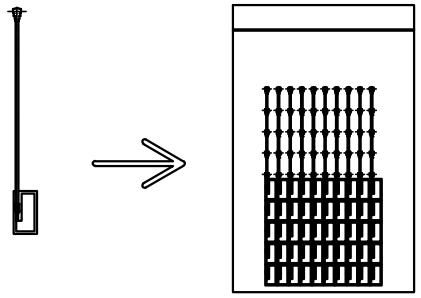
Aristotle
CONNECT TO THE WORLD

信賴性測試

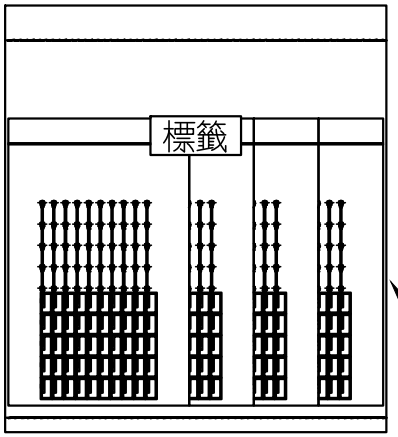
RFA-BT-AP303-79B-80			
測試項目	**測試條件**	**要求**	**結果**
高溫測試	1. 待測物為未運作狀態 2. 溫度由25˚C升溫至70˚C，溫度變換時間：1˚C/分鐘 3. 溫度70˚C測試72H	外觀 電器特性	PASS
低溫測試	1. 待測物為未運作狀態 2. 溫度由25˚C降溫至-40˚C，溫度變換時間：1˚C/分鐘 3. 溫度-40˚C測試72H	外觀 電器特性	PASS
溫溼度測試	1. 待測物為未運作狀態 2. 溫度由25˚C升溫至70˚C，溫度變換時間：1˚C/分鐘；濕度由50%增加至90%，濕度變化率：1%/分鐘 3. 溫度70˚C、濕度90% ，測試72H	外觀 電器特性	PASS
溫度衝擊測試	1. 待測物未運作狀態 2. 溫度轉換時間：小於30秒鐘 3. 溫度由25˚C降溫至-40˚C，於-40˚C恆溫30分鐘；溫度由-40˚C升溫至70˚C，於70˚C恆溫30分鐘；此為一循環 4. 循環次數：48循環	外觀 電器特性	PASS
拉力測試	單獨定義產品焊點拉力 0˚≧1.5kg，90˚≧1.5kg，180˚≧1.5kg	符合待測物規範	PASS

① 小包裝50PCS



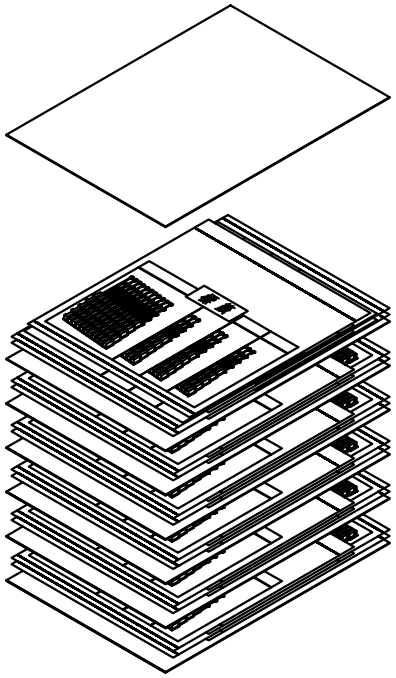
夾鏈袋

② 中包裝200PCS－1袋



PE袋

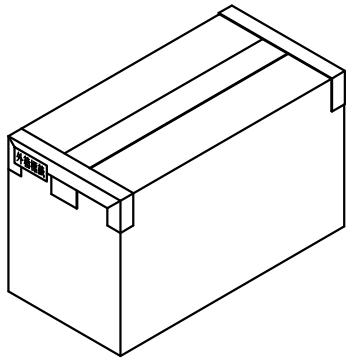
③ 大包裝5000PCS－1箱

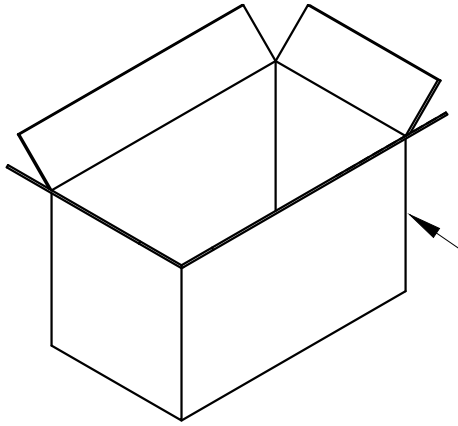


每層中包裝4袋

第六層5袋

④



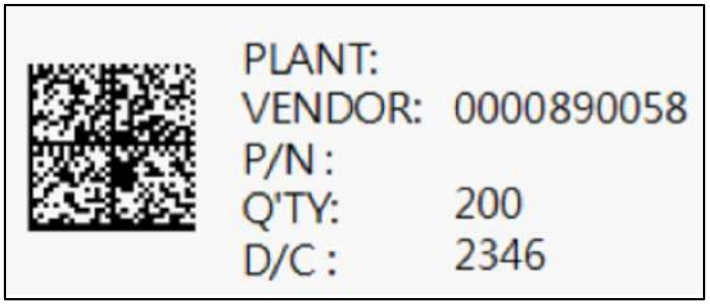


外箱

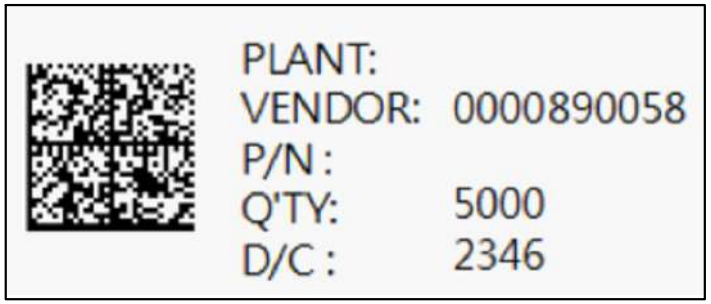
PROJECTION	TOLERANCE UNLESS OTHERWISE SPECIFIED		亞驪企業股份有限公司 ARISTOTLE ENTERPRISES INC.
	LINER	ANGLE	
UNITS	.X ±1.0	X° ±5°	
MM	.XX ±0.5		TITLE
	.XXX ±0.2		RFA－BT－AP303－79B－80

3.				REV.	A				DWG NO. RFA－BT－AP303－79B－80_ 包裝SOP
2.				SHEET	1/2	CHKD.			
1.				SIZE	SCALE				
REV.	ECN.	NAME	DATE	A4	1:1	DRAW	Gino	20231116	

PE Bag Label Size: 70x30 mm



Carton Label Size: 70x30 mm



PROJECTION				TOLERANCE UNLESS OTHERWISE SPECIFIED				亞驪企業股份有限公司 ARISTOTLE ENTERPRISES INC.	
				LINER		ANGLE			
UNITS				.X ±1.0		X° ±5°			
MM				.XX ±0.5				TITLE	
				.XXX ±0.2				RFA-BT-AP303-79B-80	
3.				REV.	A				
2.				SHEET	2/2	CHKD.			DWG NO.
1.				SIZE	SCALE				RFA-BT-AP303-79B-80_
REV.	ECN.	NAME	DATE	A4	1:1	DRAW	Gino	20231116	包裝SOP

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NAN YA PLASTICS CORPORATION
ELECTRONIC MATERIALS DIVISION.
COPPER CLAD LAMINATE DEPARTMENT

NO. 201. TUNG HWA N. ROAD,
TAIPEI, TAIWAN.

Glass cloth base epoxy resin
flame retardant copper clad laminate

NP-140TL

■ FEATURES

- Multi-functional epoxy renders the material outstanding heat resistance, better dimensional stability, and through-hole reliability that benefit the performance of high layer count multilayer boards.
- HTE copper foil applied to prevent corner cracking.
- High luminance of epoxy contrast with copper for laser type A.O.I.
- UV solder mask may be applied simultaneously in order to increase yields.
- IPC-4101B specification is applicable.

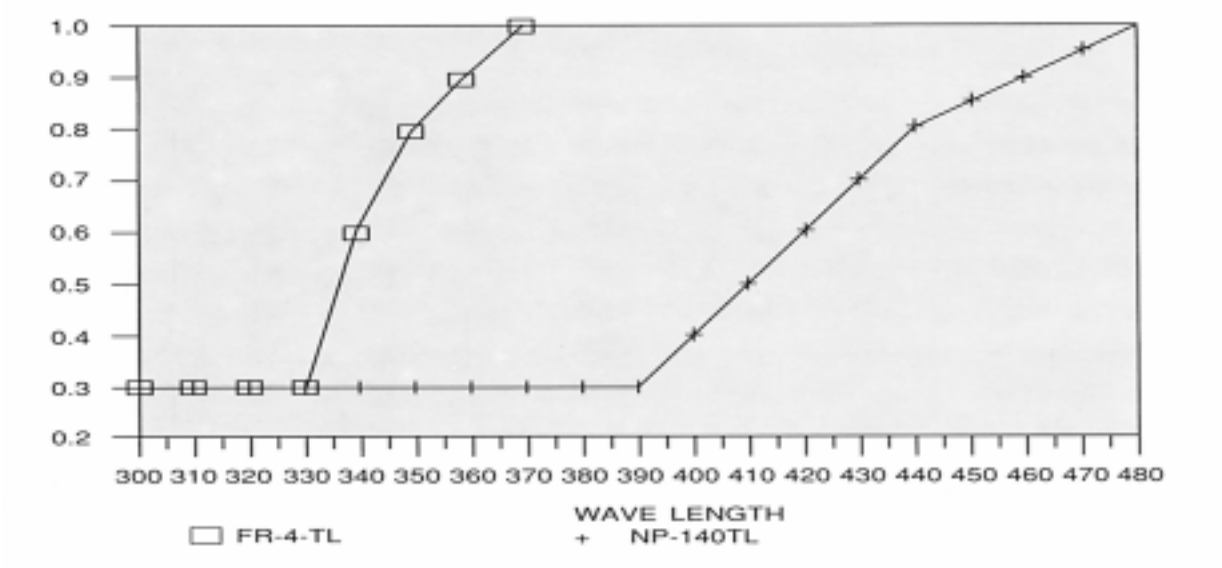
■ PERFORMANCE LIST

Characteristics	Unit	Conditioning	Typical Values	SPEC	Test Method
Volume resistivity	MΩ-cm	C-96/35/90	5.0 x10^9	10^6 ↑	2.5.17
Surface resistivity	MΩ	C-96/35/90	5.0 x10^7	10^4 ↑	2.5.17
Permittivity 1 MHZ	-	C-24/23/50	4.2-4.4	5.4 ↓	2.5.5.9
Permittivity 1 GHZ	-	C-24/23/50	3.8-4.0	-	2.5.5.9
Loss Tangent 1 MHZ	-	C-24/23/50	0.015-0.020	0.035 ↓	2.5.5.9
Loss Tangent 1 GHZ	-	C-24/23/50	0.012-0.014	-	2.5.5.9
Arc resistance	SEC	D-48/50+D-0.5/23	120 ↑	60 ↑	2.5.1
Dielectric breakdown	KV	D-48/50	60 ↑	40 ↑	2.5.6
Moisture absorption	%	D-24/23	0.20-0.30	0.35 ↓	2.6.2.1
Flammability	-	C-24/23/50+E-24/125	94V0	94V0	UL94
Peel strength 1 oz	lb/in	288°Cx10" solder floating	10-14	6 ↑	2.4.8
Thermal stress	SEC	288°C solder dipping	90 ↑	10 ↑	2.4.13.1
Glass transition temp	°C	DSC	140 ± 5	N/A	2.4.25
Dimensional stability X-Y axis	%	E 4/105	0.01-0.03	0.05 ↓	2.4.39
Coefficient of thermal expansion Z-axis before Tg Z-axis after Tg	ppm/°C ppm/°C	TMA TMA	50-70 250-350	N/A	2.4.24

Data shown are nominal values for reference only.

NOTE:
The average value in the table refers to samples of .020" 1/1.
Test method per IPC-TM-650

■ UV TRANSMISSION CURVE OF 0.2mm CCL



■ PRODUCT SIZE & THICKNESS

THICKNESS INCH(mm)	COPPER CLADDING OZ (μm)	SIZE INCH	SIZE mm	THICKNESS TOLERANCE
0.004 (0.1)	0.5 (17)	48.8 x 36.6	1240 x 0930	
to	1.0 (35)	48.8 x 40.5	1240 x 1030	CLASS C/M
0.047(1.2)	2.0 (70)	48.8 x 42.5	1240 x 1080	

■ Keeping the core and prepreg in the same grain direction is crucial to ensure the flatness of multilayer boards.

Grain direction is shown on the Certificate of Conformance

■ CERTIFICATION UL

・UL File No. : E98983

■ CONSTRUCTION:

THICKNESS mm	THICKNESS mil	CONSTRUCTION	
0.08	3	2112	1 ply
0.10	4	1080	2 plies
0.11	4	2116	1 ply
0.13	5	1080	2 plies
0.13sp	5	2116	1 ply
0.15	6	1506	1 ply
0.16	6	2112	2 plies
0.21	8	7628	1 ply
0.26	10	2116	2 plies
0.30	12	2116	3 plies
0.30sp	12	1506	2 plies
0.35	14	7628	2 plies
0.38	15	7628	2 plies

THICKNESS mm	THICKNESS mil	CONSTRUCTION	
0.45	18	7628 x 2 + 1080 x 1	
0.46	18	7667	2 plies
0.50	20	7628	3 plies
0.53	21	7628	3 plies
0.60	24	7628	3 plies
0.77	31	7628	4 plies
0.8	32	7628	4 plies
0.9	36	7628	5 plies
1.0	39	7628	5 plies
1.1	43	7628	6 plies
1.2	47	7628	6 plies

*1.2,1.1,1.0,0.9,0.77 mm, THICKNESS INCLUDES CLADDING. ALL OTHERS EXCLUDE CLADDING.

物質安全資料表

一、 物品與廠商資料

物品名稱：銅箔基板與膠片
其他名稱：NP-140B/NP-140TL
建議用途及限制使用：---
製造商或供應商名稱、地址及電話：台灣新北市樹林區味王街55號 (02)26806311
緊急聯絡電話/傳真電話：886-02-26806311ext706 Fax:886-02-26807234

二、 危害辨識資料

物品危害分類：---
標示內容：---
其他危害：---

三、 成分辨識資料

Prepreg 產品是由半固化(B-Stage)環氧樹脂加上電子級玻纖布補強材所組成之半固化黏合膠片；基板則為完全固化(C-Stage)樹脂之 Prepreg 黏附銅箔之 Laminate 成品。樹脂包含鹵素有機元素且樹脂內含有窄量揮發性有機物質。

混合物：樹脂、電子級玻纖布與銅箔

化學性質：		
物質成分之中英文名稱	濃度或濃度範圍(成分百分比)	物質分類(CAS No)及圖式
電子級玻纖布 E-Glass Fabric	30-60	14808-60-7
銅箔 Copper Foil	10-30	7440-50-8
環氧樹脂 Epoxy Resin	30-60	67-64-1

四.急救措施

不同暴露途徑之急救方法：

吸　　入： 以大量清水清洗口鼻.

皮膚接觸： 以壓縮空氣(air)吹淨皮膚,衣物接觸面並以清水清洗皮膚.

食　　入：催吐後以大量清水沖洗口腔。

眼睛接觸：樹脂粉屑若不慎飛入眼睛，需儘速以大量清水沖洗。

最重要症狀及危害效應：粉塵附著皮膚造成之人體過敏反應；裁切不慎時人體皮膚割、壓傷
對急救人員之防護：N/A
對醫師之提示：N/A

四、 滅火措施

適用滅火劑：清水(以噴霧狀最效果最佳)、乾粉或二氧化碳滅火劑
滅火時可能遭遇之特殊危害：吸入燃燒時產生的煙霧
特殊滅火程序：N/A
消防人員之特殊防護裝備：穿著正壓隔離呼吸用具和全覆式防護衣

五、 洩漏處理方法

個人應注意事項:固體物質，無洩漏之虞
環境注意事項：N/A
清理方法：N/A

六、 安全處置與儲存方法

處置：N/A

物質安全資料表

儲存：基材(Prepreg)包裝後；23℃ RH 85% ↓ → 90 天 基板(Laminate)包裝後；室溫(具有空調設備)→兩年

七、 暴露預防措施

工程控制：N/A			
控 制 參 數			
八小時日時量平均容許濃度 **TWA**	短時間時量平均容許濃度 **STEL**	最高容計濃度 **CEILING**	生物指標 BEIs
N/A	N/A	N/A	N/A
個人防護設備： 呼吸防護：當硬質板鑽孔、磨邊或裁切時易產生飛散之微粉塵粒，應穿戴口罩或於集塵良好處進行 手部防護：棉紗手套(不一定必需)，但可避免裁取不慎時手部遭刮傷 眼睛防護：不一定必需，但穿戴護目鏡或其它適當遮蔽可避免加工時飛屑等進入眼睛 皮膚及身體防護：N/A			
衛生措施：N/A			

物質安全資料表

八、 物理及化學性質

外觀：淡黃色	氣味：N/A
嗅覺閾值：N/A	熔點：N/A
pH 值：6-7	沸點/沸點範圍：N/A
易燃性(固體，氣體)：固體(扁長形片狀物質)	閃火點：N/A ℉ N/A ℃
分解溫度：N/A	測試方法：閉杯 閉杯
自燃溫度：N/A	爆炸界限：N/A
蒸氣壓：N/A	蒸氣密度：N/A
密度：1.80-1.90	溶解度：不溶水
辛醇/水分配係數(log Kow)：N/A	揮發速率：N/A

九、 安定性及反應性

安定性：常溫為安定狀態
特殊狀況下可能之危害反應：燃燒後
應避免之狀況：無外包裝時置放在無空調(或規定儲存條件)之環境中
應避免之物質：避免接近火源或與強酸、強鹼之化學藥品接觸
危害分解物：碳渣

十、 毒性資料

暴露途徑：N/A
症狀：N/A
急毒性： 皮膚：N/A 吸入： N/A 食入：N/A 眼睛: N/A **LD50(**測試動物、吸收途徑**)**：N/A **LC50(**測試動物、吸收途徑**)**：N/A LDLO：N/A LDLO：N/A
區部效應：N/A
慢毒性或長期毒性：N/A

物質安全資料表

十一、 生態資料

生態毒性：N/A
持久性及降解性：N/A
生物蓄積性：N/A
土壤中之流動性：N/A
其他不良效應：N/A

十二、 廢棄處置方法

焚化成碳渣後適當掩理

十三、運送資料

聯合國編號：N/A
聯合國運輸名稱：N/A
運輸危害分類：N/A
包裝類別：基板以紙箱裝置，以一般貨卡車載運；PP需以密閉式冷藏車載運
海洋污染物(是/否)：否
特殊運送方法及注意事項：基材需置於23℃↓,85%RH↓之冷藏車裝運

十四、 法規資料

適用法規：職業安全衛生法

物質安全資料表

十五、 其他資料

參考文獻		
製表者單位	名稱：南亞電子部產銷一組技術處	
	地址/電話：台灣新北市樹林區味王街55號	
製表人	職稱：品管專員	姓名(簽名)：杜衍澍
製表日期	2019.11.21	
備註	上述資料中符號"－"代表目前查無相關資料，而符號"/"代表此欄位對該物質並不適用。生物指標 中的註記**"Ns"**代表非專一性指標，符號**"Sc"**代表需注意易受感族群，符號**"B"**代表請注意背景值， 符號**"Nq"**代表未有確定建議值，符號**'Sq"**代表半定量性建議值。	

上述資料由勞委會委託製作，各項數據與資料僅供參考，使用者請依應用需求判斷其可用性，尤其需注意混合時可能產生不同之危害，並依危險物與有害物標示及通識規則之相關規定，提供勞工必要之安全衛生注意事項。

ONLINE CERTIFICATIONS DIRECTORY

QMTS2.E98983
Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component

Enhanced searching capability for this category can be found in UL's iQ Family of Databases (iq.ul.com).

Page Bottom

Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component

See General Information for Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component

NAN YA PLASTICS CORP CCL DEPT ELECTRONIC MATERIAL DIV E98983
201 TUNG HWA N RD
TAIPEI, 10508 TAIWAN

High density interconnect - resin coated foils:

		Core		Dielectric			R.T.I.				H		
Mtl Dsg	Color	Min Thk (mm)	Max Thk (mm)	Min Thk (mic)	Max Thk (mic)	Flame Class	Elec (°C)	Mech (°C)	HWI	HAI	VTR	CTI	Meets 746E DSR
ANSI FR-4 core with Epoxy (EP) dielectric, High density interconnect - resin coated foils, furnished as sheets.													
NPRCC ($2)@&, NPRC180 ($2)@&, NPRCC(H) ($2)@&													
	NC	0.10	-	35	110	V-0	90	-	0	4	-	4	-
NPRCCG ($4)@&, NPRC180G ($4)@&													
	NC	0.10	-	35	110	V-0	90	-	0	1	-	4	-
UL ANSI FR-4 core with Epoxy (EP) dielectric, High density interconnect - resin coated foils, furnished as sheets.													
NPRCF @	NC	0.035	-	25	110	V-0	-	-	-	-	-	-	-

Industrial laminates:

			Build up		R.T.I.				H		
Mtl Dsg	ANSI Type	Color	Min Thk (mm)	Flame Class	Elec (°C)	Mech (°C)	HWI	HAI	VTR	CTI	Meets 746E DSR
Industrial laminates, furnished as rolls.											
NPG-PYR, NPG-PYTL, NPG-170PYR, NPG-170PYTL											
	No ANSI	NC	0.64	V-0	90	90	0	0	-	-	Yes
		NC	1.40	V-0	90	90	0	0	-	0	Yes
		NC	0.38	V-0	90	90	0	0	-	-	Yes
Industrial laminates, furnished as sheets.											
CEM-1-05	CEM-1	NC	0.63	V-0	130	140	3	2	-	-	Yes
			1.40	V-0	130	140	1	2	-	0	Yes
CEM-1-05PY, CEM-1-08											
	No ANSI	NC	0.63	V-0	90	90	0	4	-	-	-
			1.40	V-0	90	90	0	4	-	0	-

CEM-1-87, UV Block CEM-1-87											
	CEM-1	NC	0.64	V-0	130	140	3	2	0	-	Yes
			1.40	V-0	130	140	1	2	0	3	Yes
CEM-1-97, CEM-1-97 PM, UV Block CEM-1-97											
	CEM-1	NC	0.64	V-0	130	140	3	2	-	-	Yes
			1.40	V-0	130	140	1	2	-	0	Yes
CEM-3-01	No ANSI	NC	0.64	V-0	115	115	0	4	-	-	-
			1.40	V-0	115	115	0	3	-	3	Yes
CEM-3-01PY, CEM-3-09, CEM-3-01 HC, CEM-3-09HT											
	CEM-3	NC	0.63	V-0	130	140	0	2	-	-	Yes
			1.40	V-0	130	140	0	2	-	0	Yes
CEM-3-86, UV Block CEM-3-86											
	CEM-3	NC	0.64	V-0	130	140	0	0	-	-	Yes
			1.40	V-0	130	140	0	0	0	3	Yes
CEM-3-92 PY, CEM-3-10											
	CEM-3	NC	0.63	V-0	130	140	0	2	-	-	Yes
			1.40	V-0	130	140	0	2	-	0	Yes
CEM-3-92, UV Block CEM-3-92											
	CEM-3	NC	0.64	V-0	130	140	0	2	-	-	Yes
			1.40	V-0	130	140	0	2	-	3	Yes
CEM-3-95	CEM-3	BK	0.64	V-0	130	140	0	0	-	-	Yes
			1.40	V-0	130	140	0	0	-	3	Yes
CEM-3-98, CEM-3-86PY											
	No ANSI	NC	0.64	V-0	120	120	0	3	-	-	Yes
			1.40	V-0	120	120	0	3	-	0	Yes
FR-4-86 (#1), FR-4-TL (#1), UV Block FR-4-86 (#1)											
	FR-4	NC	0.18	V-0	130	105	0	0	-	-	Yes
			0.38	V-0	130	130	0	0	-	-	Yes
			0.64	V-0	130	140	0	0	-	-	Yes
			1.40	V-0	130	140	0	0	0	3	Yes
FR-4-98, FR-4-86PY, NP-140TLPY											
	No ANSI	NC	0.38	V-0	130	120	0	3	-	-	Yes
			0.64	V-0	130	120	0	3	-	-	Yes
			1.40	V-0	130	120	0	3	-	0	Yes
NP-140R (#2), NP-140TL (#2), NP-140MR (#2), NP-140MTL (#2)											
	FR-4		0.04	V-0	120	130	3	4	-	-	-
			0.25	V-0	120	130	3	3	-	-	Yes
			0.38	V-0	130	130	0	3	-	-	Yes
			0.64	V-0	130	140	0	3	4	-	Yes
			1.40	V-0	130	140	0	2	4	3	Yes
NP-150TL, NP-150R											
	FR-4	NC	0.38	V-0	130	130	0	3	-	-	Yes
			0.64	V-0	130	140	0	3	-	-	Yes
			1.40	V-0	130	140	0	2	-	4	Yes

3M

Double Coated Tissue Tapes

9888T

Temporary Technical Data ***May, 2002***

Product Description:

Product 9888T double coated tissue tape features a tissue carrier for dimensional stability and improved handling with ease of die cutting and laminating.

Construction:

Product Number	Adhesive[1]/ Color/ Tape Thickness	Carrier	Liner Color, Type, Print	Liner Caliper
9888T	Translucent, 0.0059" (0.150mm)	Tissue translucent in color	White, PE[2] polycoated paper, 3M logo print in red color	0.0059" (0.150mm)

Note 1: Pressure Sensitive Acrylic Adhesive provides excellent initial tack and adhesion to a wide variety surface including many low surface energy plastics.

Note 2: PE (Polyethylene)

Feature

1. 9888T feature a medium-soft acrylic pressure sensitive adhesive system. The key characteristics of this adhesive include a combination of high initial adhesion and good shear and holding power to a wide variety of materials, including many plastics.
2. 9888T feature controlled adhesive flow into open cell foam and controlled caliper for bond to application surface.
3. For foam laminating, it provides excellent foam stability to reduce stretching and allows to more precise alignment during application.

Typical Physical Properties and Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Product Number	9888T
Adhesion to stainless steel ASTM D3330 –180 degree, 2 mil Al foil at 22°C, 50%RH	g/25.4m
15 minute RT	2940
72 Hour RT	3180
Adhesion to ABS ASTM D3330 –180 degree, 2 mil Al foil at 22°C, 50%RH	
15 minute RT	2210
72 Hour RT	2440
Adhesion to PC ASTM D3330 –180 degree, 2 mil Al foil at 22°C, 50%RH	
15 minute RT	2560
72 Hour RT	2670
Adhesion to PP ASTM D3330 –180 degree, 2 mil Al foil at 22°C, 50%RH	
20 minute RT	1900
72 Hour RT	2190

Shear strength ASTM D3654 modified 0.5 inch^2 sample size at 22°C	
1000 grams	10000 mins
Relative High temperature Operating Ranges	
Long Term (days, weeks)	80°C
Short Term (minutes, hours)	120°C

Shelf Life

12 months from date of receipt by customer when stored in original carton at 22 °C and 50% relative humidity

Application Techniques:

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure helps develop better adhesive contact and improves bond strength.

To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Some typical surface cleaning solvents are isopropyl alcohol or heptane. Note: Carefully read and follow the manufacturer's precautions and directions for use when working with solvents.

Ideal tape application temperature range is 70° F to 100° F (21° C to 38° C). Initial tape application to surfaces at temperatures below 50° F (10° C) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

General Information

Tape 9888T has a tissue carrier, which can add dimensional stability to foams and other substrates. The carrier also provides easier handling during slitting and die-cutting.

Application Ideas

- 9888T tapes are specially formulated for many indoor high performance purpose mounting and joining applications, including bonding to Polyethylene, Polypropylene and many other Plastics, where moderate temperature and shear performance are required.
- 9888T tapes are formulated for more demanding indoor and moderate outdoor high performance mounting and joining application.
- Application ideas for these tapes include
    - Lens attachment for mobile phone
    - Wire and Cable Clips
    - Appliance, Case for display and Electronics Equipment Trim
    - Interior under sheet for car
    - Paper splicing
    - Foam, Gasket attachment in mobile phones and pagers.
    - Plastics Hooks, Racks and Dispensers
    - Sign, Nameplates and Plaques
    - Appliques

Important Notice

3M MAKES NO WARRANTES, EXPRESS OR IMPLED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. Please remember that many factors can affect the use and performance of a 3M product in a particular application. The materials to be bonded with the product, the surface preparation of those materials, the product selected for use, the conditions in which the product is used, and the time and environmental conditions in which the product is expected to perform are among the many factors that can affect the use and performance of a 3M product. Given the variety of factors that can affect the use and performance of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

Limitation of Remedies and Liability

If the 3M product is proved to be defective, THE EXCLUSIVE REMEDY, AT 3M'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OF OR TO REPAIR OR REPLACE THE DEFECTIVE 3M PRODUCT. 3M shall not otherwise be liable for loss or damages, whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including negligence, warranty, or strict liability.

物質安全資料表

此物質安全資料表（SDS）爲一種禮貌回復客戶的要求。此產品不受法規管轄，此乃依據行政院勞工委員會2007年10月19日頒布的“危險物與有害物標示及通識規則“，因爲正常使用情況下，它不應該存在危及健康和安全的事宜。但是，加工此產品不符合產品當初之設計與使用，可能存在潛在的健康和安全隱憂。

文件編號：	19-2445-5	**版次：**	3.00
製表日期：	2013/03/03	**前版日期：**	2013/03/03

本安全數據表乃按照“危險物與有害物標示及通識規則"（由行政院勞工委員會對理事會2007年10月19號）

一 物品與廠商資料

1.1. 產品標識
9888T DOUBLE COATED TISSUE TAPE

1.2. 建議用途和限制使用

推薦用途
貼合

1.3. 產品製造商或供應商訊息
地址： 106 台北市敦化南路二段95號6樓
聯繫電話號碼： (03) 478-3600
電子郵件信箱： schang7@mmm.com
網址： www.3m.com.tw

1.4. 緊急聯絡電話號碼
緊急聯絡電話號碼：886-3-4783600, 8:00AM - 4:30PM
傳真號碼：(03) 475-0924, 475-0904

二 危害辨識資料

2.1. 物質或混合物的分類
該產品GHS危害分類，依據危險物與有害物標示與通識規則第4條”豁免”。

2.2. 標籤

警示語
不適用

象徵符號
不適用

危害圖示
不適用

2.3. 其他危害物
未知

三 成分辨識資料

本材料是一種混合物。

成分	C.A.S.號	重量百分比
丙烯酸酯膠粘劑	商業秘密	45 - 55
離形紙：有機矽塗層離型紙	無	40 - 50
不織布載體	無	3 - 10

四 急救措施

4.1. 急救措施說明

吸入：
預計無需急救。

皮膚接觸：
預計無需急救。

眼睛接觸：
預計無需急救。

如果吞食：
預計無需急救。

4.2. 最重要的急性和延遲性症狀和影響
請參閱第11.1節關於毒理學影響的資料

4.3. 建議，以保護救援人員，並特別向醫生發出警告
請參閱本MSDS的其他部分的信息，對身體和健康的危害，呼吸防護，通風和個人防護裝備。

4.4. 及時的醫療關注和需要特殊處理的指示
不適用

五 滅火措施

5.1. 適當的滅火介質
在火災情況下：使用適用於一般可燃物質的滅火劑，如水或泡沫。

5.2. 從該物質或混合物所產生的特別危害物質
此產品無固有特性

危害的分解物或副產品

物質	條件
一氧化碳	在燃燒過程中
二氧化碳	在燃燒過程中

5.3. 消防人員的特殊防護措施
無異常火災或爆炸危險

六 洩漏處理方法

6.1. 人員防護、防護具和應變程序
不適用

6.2. 環境注意事項
不適用

6.3. 遏制和清理適用的方法和材料
不適用

七 安全處置與儲存方法

7.1. 安全處理的注意事項
此產品可視爲製成品,在正常條件下不會釋放或導至有害化學品暴露

7.2. 包括任何不兼容物的安全儲存條件
不適用

八 曝露預防措施

8.1 控制參數

職業暴露限值
在本物質安全資料表第3節中所列出的任何成分皆無職業暴露限值。

8.2. 曝露控制

8.2.1. 加工控制

8.2.2. 個人防護具(PPE)

眼睛/臉部防護

無需眼睛防護。

皮膚/手防護

無需皮膚防護。

呼吸系統防護

無需呼吸系統防護。

8.4.衛生措施
見7.1節安全處理的注意事項

九 物理和化學性質

9.1. 基本的物性和化性相關資料

物理狀態	固體
外觀/氣味	膠帶有輕微的丙烯酸氣味
嗅覺閾值	*不適用*
PH值（或酸鹼值）	*不適用*
熔點/凝固點	*不適用*
沸點/初沸點/沸騰範圍	*不適用*
閃火點	*不適用*
揮發速率	*不適用*
易燃性(固體，氣體)	未歸類。
可燃下限(LEL)	*不適用*
可燃爆炸上限(UEL)	*不適用*
蒸氣壓	*不適用*
蒸氣密度	*不適用*
密度	*不適用*
相對密度	*不適用*
溶解度 - 非水	*不適用*
分配係數：正-辛醇/水	*無可用數據*
自燃溫度	*不適用*
分解溫度	*不適用*
黏度	*不適用*
可揮發比例	*不適用*

十 安定性和反應性

10.1 反應性
此原料可能在特定條件下會與某些試劑產生反應-其餘請見此章節說明

10.2 化學穩定性
穩定。

10.3 可能的危害反應
不會發生危害的聚合反應。

10.4 應避免的狀態
火花和/或火焰

10.5 不兼容的材料
未知

10.6 危害性分解物質

物質	條件
未知	

在建議的使用條件下，不會有危害的分解物。 氧化、加熱、或與其他物質發生反應有可能產生有危害的分解物。

十一 毒性資料

以下資料可能與第2節的材料分類不一致，如果特定成分分類是由主管機關授權時。此外，成分的毒理學數據可能不會予以反映在材料分類和/或暴露的徵兆和症狀中，如果一種成分含量低於應標示值以下、一種成分可能不會暴露或該資料可能與整體材料無關時。

11.1 毒理學影響相關資料

暴露的徵兆和症狀

根據成份上的試驗數據和/或資料得知，這種材料可能會對健康產生以下影響：

吸入：
不會影響健康。

皮膚接觸：
不會影響健康。

眼睛接觸：
不會影響健康。

吞食：
不會影響健康。

額外資料：

在正常條件下並按照3M 之說明使用本品，不會有健康危害。 然而，未按照3M 之說明使用本品，可能會影響產品的性能並出現潛在的健康和安全的危害。

毒理學資料

急毒性

名稱	路徑	種類	數值
整體產品	吞食		數據不可用或不足進行分類計算ATE>5,000 mg/kg
丙烯酸酯膠粘劑	吞食		LD50 估計後爲 2,000 - 5,000 mg/kg

ATE = 急毒性估計值

皮膚腐蝕/刺激

名稱	種類	數值
丙烯酸酯膠粘劑		數據不可用或不足以分類

嚴重眼睛傷害/刺激

名稱	種類	數值
丙烯酸酯膠粘劑		數據不可用或不足以分類

皮膚致敏性

名稱	種類	數值
丙烯酸酯膠粘劑		數據不可用或不足以分類

呼吸過敏性

名稱	種類	數值
丙烯酸酯膠粘劑		數據不可用或不足以分類

生殖細胞致突變性

名稱	路徑	數值
丙烯酸酯膠粘劑		數據不可用或不足以分類

致癌性

名稱	路徑	種類	數值
丙烯酸酯膠粘劑			數據不可用或不足以分類

生殖毒性

生殖和/或生長發育的影響

名稱	路徑	數值	種類	測試結果	暴露期間
丙烯酸酯膠粘劑		數據不可用或不足以分類			

標的器官

特定標的器官毒性 - 單次暴露

名稱	路徑	標的器官	數值	種類	測試結果	暴露期間
丙烯酸酯膠粘劑			數據不可用或不足以分類			

9888T DOUBLE COATED TISSUE TAPE

特定標的器官毒性 - 重複暴露

名稱	路徑	標的器官	數值	種類	測試結果	暴露期間
丙烯酸酯膠粘劑			數據不可用或不足以分類			

吸入性危害物質

名稱	數值
丙烯酸酯膠粘劑	不屬於吸入性危害

本材料和/或其成分的其他毒理學資料，請洽該物質安全資料表第一頁上所列的地址或電話號碼。

十二 生態資料

以下資料可能與第2節的材料分類不一致，如果特定成分分類是由主管機關授權時。第2節中材料分類相關的其他資料可依照要求提供。此外，成分的環境結果和影響數據可能不會予以反映在本節，因爲一種成分含量低於應標示值以下、一種成分可能不會暴露或該資料可能與整體材料無關時。

12.1. 毒性

急性水生生物危害：
GHS標準，對水生生物的急性毒性。

慢性水生危害：
GHS標準，對水生生物慢性毒性。

無可用的產品測試數據
無可用的成分測試數據

12.2. 持久性和分解性
無可用的測試數據

12.3 生物積累的可能性
無可用的測試數據

12.4. 土壤中的遷移性
更多詳細資料，請聯繫製造商

12.5 其它不利的影響
無可用資料。

十三 廢棄處理方法

13.1. 廢棄處理方法
根據當地/區域/國家/國際法規來廢棄處理內容物/容器

每項{特殊規定}下，本產品已歸類爲非危害廢棄物。在處理前，諮詢所有適用主管機關和規定，以確保適當分類。在許可工業廢棄物處理設施中進行廢棄產品的處理。 如爲拋棄式替代品時，在許可廢棄物焚化爐中進行焚燒。如果無其他處理辦法可用情況下，可將廢棄產品放置在針對工業廢棄物所妥善設計的垃圾掩埋場中。

十四 運送資料

14.1. 國際法規

十五 法規資料

15.1. 專屬於該物質或混合物的安全、健康和環境的規定/法規

適用法規：
台灣, 事業廢棄物貯存清除處理方法及設施標準,清理和處置工業廢物（EPA訂單號0950098458C1，表 1 ，
處理有害事業廢棄物2006年12月14日）

勞動安全衛生法
道路交通安全規則

十六 其他資料

16.1. 參考文獻

諮詢者資訊

公司名稱：	台灣明尼蘇達礦業製造股份有限公司
製表人職稱與姓名:	張建文
電子郵件信箱:	schang7@mmm.com
製表單位電話：	886 3 478 3600 #388

版本資料：
版本修訂：
第2部分：TW GHS分類 已修改.
台灣製成品免責聲明 已修改.

免責聲明：本物質安全資料表上的資料是根據我們的經驗而來，且就我們在公告日期的最佳知識所知爲正確的，不過我們並不承擔任何其使用所導致的任何損失、傷害或受傷(法律規定者除外)。本資料並不適用於本物質安全資料表中未提及的任何其他用途，或將該產品結合其他材料的用途。由於這些原因，因此很重要的是由客戶進行自己滿意的測試，以便於讓該產品適用性適於自己企圖的應用上。

3M台灣物質安全資料表（MSDS）www.3m.com.tw

MHF® I Connector

Ground contact gold plating
(Anti-static reel version)

Part No. Plug: 20351-1**R-37 Receptacle: 20279-001E-0*

Product Specification

Qualification Test Report No. TR-12096

Rev.	ECN	Date	Prepared by	Checked by	Approved by
7	S21590	November 11, 2021	S.Taguchi	-	M. Takemoto
6	S20593	November 10, 2020	S.Taguchi	J.Tonai	M.Takemoto
5	S19459	July 30, 2019	R. Takahashi	T. Yamauchi	Y. Shimada
4	S17648	August 31, 2017	M. Abe	-	T. Matsumoto

1. Scope

This Product Specification defines the test conditions and the performances of the MHF I Connector.

2. Product Name and Parts No.

2.1 Product Name

MHF I Connector

2.2 Parts No.

Plug: 20351-1**R-37
Receptacle: 20279-001E-0*

3. Product Shape, Dimensions and Material.

Refer to the drawing

4. Rating

4.1 Applicable cable

(1) Description

Inner conductor : AWG#30(7/0.102)
Silver plating annealed copper wire or silver plating tin-copper alloy
Dielectric core : Fluoro-plastics ,diameter 0.88mm , nominal thickness 0.29mm
Outer conductor : 16/5/0.05 , nominal diameter 1.13mm , tin plating annealed copper wire
Jacket : Fluoro-plastics , diameter 1.37mm , nominal thickness 0.12mm

(2) Requirements

Characteristic impedance : 50(±2)Ωby TDR method
Nominal capacitance(Reference value): 98 pF/m
Conductor resistance of inner conductor at 293K (20℃)(Reference value) : 320Ω/km
Insulation resistance : 1,500 MΩ・km MIN.
Dielectric withstand voltage : no breakdown at AC1,500V for 1 minutes.

4.2 Operating Condition

Voltage : 60V AC (per a contact)
Operating Temperature : 233～363K(-40℃～+90℃)
(Containing temperature rise by current)
Nominal characteristic impedance : 50Ω
Frequency : DC~9.0GHz
VSWR : Plug: 1.3 MAX. at 0.1~3GHz , 1.5 MAX. at 3~6GHz, 1.9 MAX. at 6~9GHz
Receptacle: 1.3 MAX. at 0.1~3GHz. 1.4 MAX. at 3~6GHz, 1.8 MAX. at 6~9GHz
Storage condition : Temperature 248K～333K(-25℃～+60℃)
Humidity : 85% MAX.（No condensation）

5. Test and Performance

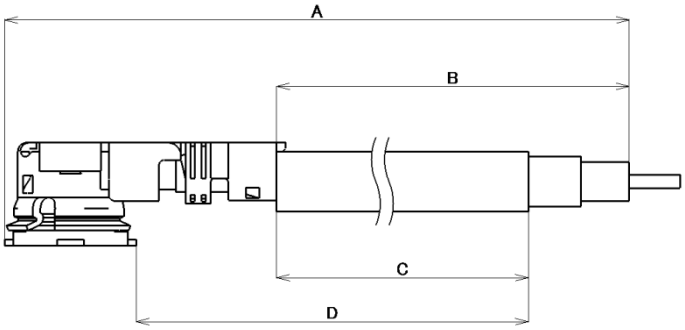
Test Condition

This initial test is equal to it's at shipping condition and unless otherwise specified, all tests and measurements shall be performed under the following conditions in accordance with MIL-STD-202.

Temperature … 288K～308K（15℃～35℃）
Pressure … 866hPa～1066hPa（650mmHg～800mmHg）
Relative Humidity … 45～75%R.H.

5.1. Electrical Performance

1. Contact resistance	
Reference standard:	MIL-STD-202G, Method 307
Test conditions:	Solder the receptacle connector to the test board and mate the plug connector together, then measure the contact resistance as shown in Fig. 1 by the four terminal method. Open circuit voltage: 20mV MAX Circuit current:10mA MAX.



Inner contact
=A-B

Ground contact
=D-C

Fig. 1

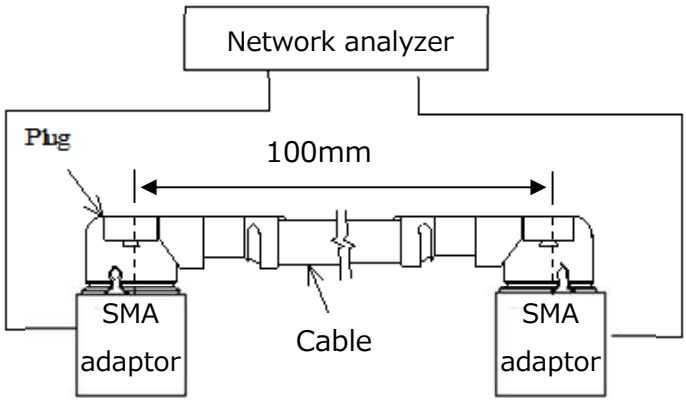
Pass criteria:	Inner contact Initial： 20mΩ MAX. After testing： 25mΩ MAX. Ground contact Initial： 10mΩ MAX. After testing： 15mΩ MAX.

2. Insulation resistance	
Reference standard:	MIL-STD-202-302, Test condition A
Test conditions:	Mate the plug and receptacle connector together, and then apply DC 100 V between the inner contact and the ground contact.
Pass criteria:	Initial ：500 MΩ MIN. After testing ：100 MΩ MIN.

3. Dielectric withstanding voltage	
Reference standard:	MIL-STD-202-301
Test conditions:	Mate the receptacle and plug connector together, then apply AC 200V(rms) between the neighboring contacts for a minute.
Pass criteria:	No abnormalities such as creeping discharge, flashover, insulator breakdown occur.

5.1. Electrical Performance

4. VSWR	
Reference standard:	
Test conditions:	Measure the VSWR as shown in Fig. 2 by the network analyzer. Frequency : 100MHz~9.0GHz



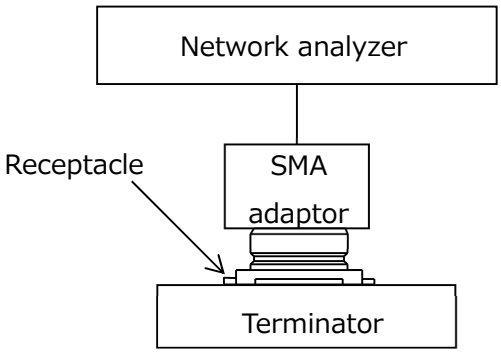


Fig. 2

Pass criteria:	Plug 0.1～3GHz 1.3 MAX., 3～6GHz 1.5 MAX., 6～9GHz 1.9 MAX Receptacle 0.1～3GHz 1.3 MAX., 3～6GHz 1.4 MAX., 6～9GHz 1.8 MAX.

5.2. Mechanical Performance

1. Unmating force	
Reference standard:	-
Test conditions:	Solder the receptacle connector to the test board, then place the board and plug on push-on/pull-off machine, measure of initial and mating/un-mating 30 cycles at a speed 25±3mm/min. along the mating axis.
Pass criteria:	Total unmating force Initial: 5N Min. After 30 cycles: 3N Min. Unmating force of inner contact Initial: 0.15N Min. After 30 cycles: 0.10N Min.

2. Crimp strength	
Reference standard:	-
Test conditions:	Pull the cable as shown in Fig. 3 at a speed 25±3mm/minutes by tensile strength machine.

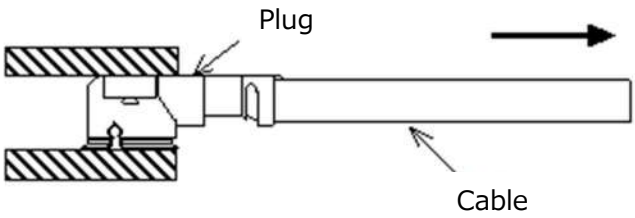
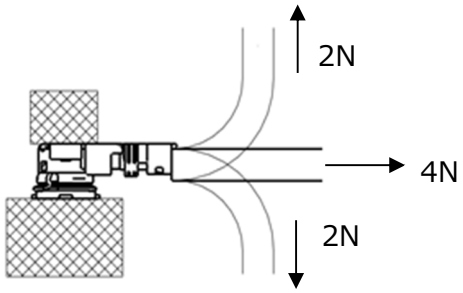


Fig. 3

Pass criteria:	15N MIN.

5.2. Mechanical Performance

3. Durability	
Reference standard:	-
Test conditions:	Solder the receptacle connector to the test board, then place the board and plug on the push-on/pull-off machine, and repeat mating and un-mating 30cycles at a speed 25±3mm/min. along the mating axis.
Pass criteria:	[Contact Resistance] Shall meet 5.1.1.

4. Cable retention force	
Reference standard:	-
Test conditions:	Apply force on the cable as shown in Fig. 4. During the testing, run 100mA DC to check electrical discontinuity.  Fig. 4
Pass criteria:	[Contact Resistance] Shall meet 5.1.1. [Electrical discontinuity] No electrical discontinuity greater than 1μs shall occur. [Appearance] No abnormality adversely affecting the performance shall occur.

5. Vibration	
Reference standard:	-
Test conditions:	Apply the following vibration to the mating connector. During the testing, run 100mA DC to check electrical discontinuity. Frequency: 10Hz→100Hz→10Hz / approx. 15 minutes. Half amplitude ,Peak value of acceleration 1.5mm or 59m/s2 (6G) Directions , cycle 3 mutually perpendicular direction 5 cycles(approx. 75min)about each direction
Pass criteria:	[Contact Resistance] Shall meet 5.1.1. [Electrical discontinuity] No electrical discontinuity greater than 1μs shall occur. [Appearance] No abnormality adversely affecting the performance shall occur.

6. Shock	
Reference standard:	-
Test conditions:	Apply the following vibration to the mating connector. During the testing, run 100mA DC to check electrical discontinuity. Peak value of acceleration : 735m/s^2 (75G) Duration: 11msec Wave Form: half sinusoidal Directions, cycle: 6 mutually perpendicular direction, 3 cycles about each direction
Pass criteria:	[Contact Resistance] Shall meet 5.1.1. [Electrical discontinuity] No electrical discontinuity greater than 1μs shall occur. [Appearance] No abnormality adversely affecting the performance shall occur.

5.3. Environmental Performance

1. Thermal Shock	
Reference standard:	-
Test conditions:	Apply the following environment to the mating connector. Temperature ,duration: 233K(-40℃)/30 minutes →278～308K(5～35℃)/5 minutes MAX. →363K(90℃)/30 minutes →278～308K(5～35℃)/5 minutes MAX. Number of cycles : 5 cycles
Pass criteria:	[Contact Resistance] Shall meet 5.1.1. [Insulation Resistance] Shall meet 5.1.2. [Appearance] No abnormality adversely affecting the performance shall occur.

2. Humidity (Steady State)	
Reference standard:	MIL-STD-202G, Method 103, Condition B
Test conditions:	Solder the receptacle connector to the test board, then mate plug connector, and expose them to the following environment. Temperature: 313±2 K (40±2℃) Humidity: 90～95%RH Duration: 96 hours
Pass criteria:	[Contact Resistance] Shall meet 5.1.1. [Insulation Resistance] Shall meet 5.1.2. [Appearance] No abnormality adversely affecting the performance shall occur.

3. Salt Water Spray	
Reference standard:	MIL-STD-202G, Method 101, Condition B
Test conditions:	Solder the receptacle connector to the test board, then mate plug connector, and expose them to the following environment. Temperature: 308±2K (35±2℃) Salt water density: 5±1% [by weight] Duration: 48 hours
Pass criteria:	[Contact Resistance] Shall meet 5.1.1. [Appearance] No abnormality adversely affecting the performance shall occur.

4. High Temperature Life	
Reference standard:	-
Test conditions:	Apply the following environment to the mating connector. Temperature: 363±2K (90±2℃) Duration: 96 hours
Pass criteria:	[Contact Resistance] Shall meet 5.1.1. [[Appearance] No abnormality adversely affecting the performance shall occur.

5.4. Others

1. Solder ability	
Reference standard:	-
Test conditions:	Dip the solder tine of the contact in the solder bath at 518±5K （245±5℃） for 5±0.5 seconds after immersing the tine in the flux of RMA or R type for 5 to 10 seconds.
Pass criteria:	More than 95% of the dipped surface shall be evenly wet.

2. Soldering Heat Resistance	
Reference standard:	-
Test conditions:	Put on the receptacle connector to PCB, apply the heat 2 cycles as shown in Fig. 5.

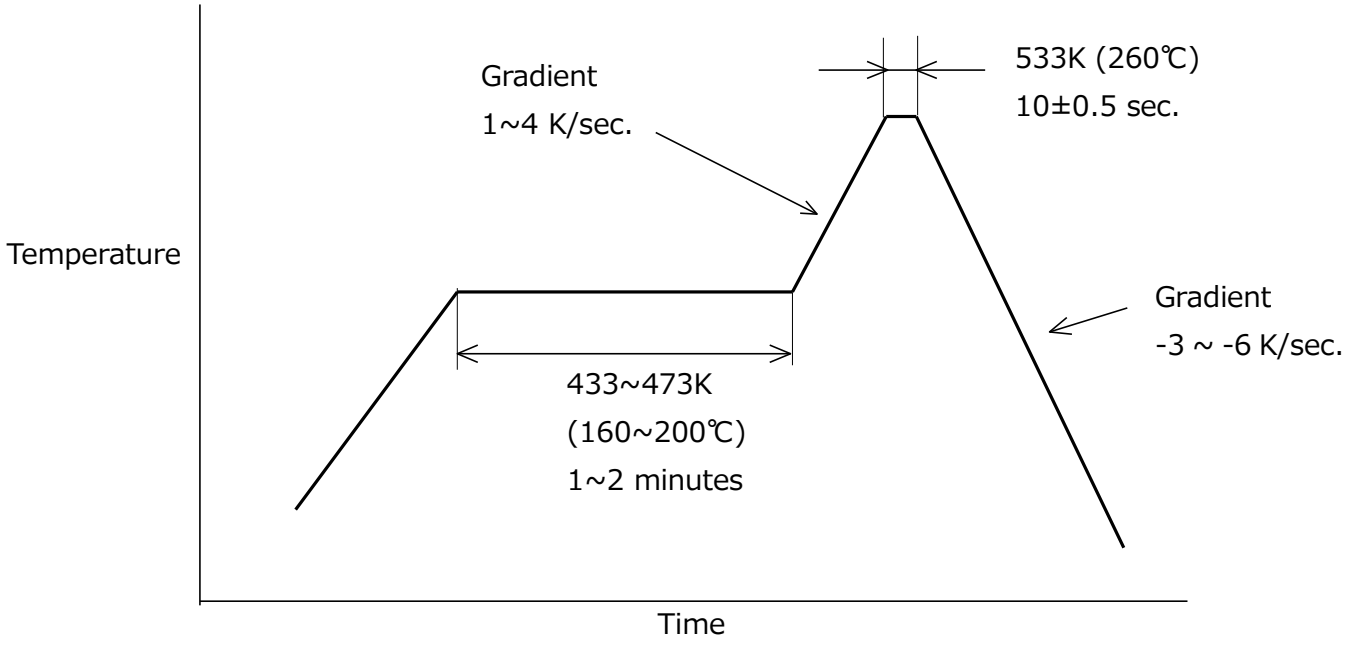


Fig. 5

Pass criteria:	[Appearance] No abnormality adversely affecting the performance shall occur.

5.5 Test Sequence and Sample Quantity

Table 1 Test Sequence and Sample Quantity

Test Item	Group													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
Contact Resistance					1,3	1,3	1,3	1,3	1,4	1,4	1,3	1,3		
Insulation Resistance									2,5	2,5				
Dielectric Withstanding Voltage	1													
VSWR		1												
Unmating Force			1											
Crimp Strength				1										
Durability					2									
Cable Retention Force						2								
Vibration							2							
Shock								2						
Thermal Shock									3					
Humidity (Steady State)										3				
Salt Water Spray											2			
High Temperature Life												2		
Solder ability													1	
Soldering Heat Resistance														1
Sample Quantity	10	5	10	10	10	10	10	10	10	10	10	10	10	10

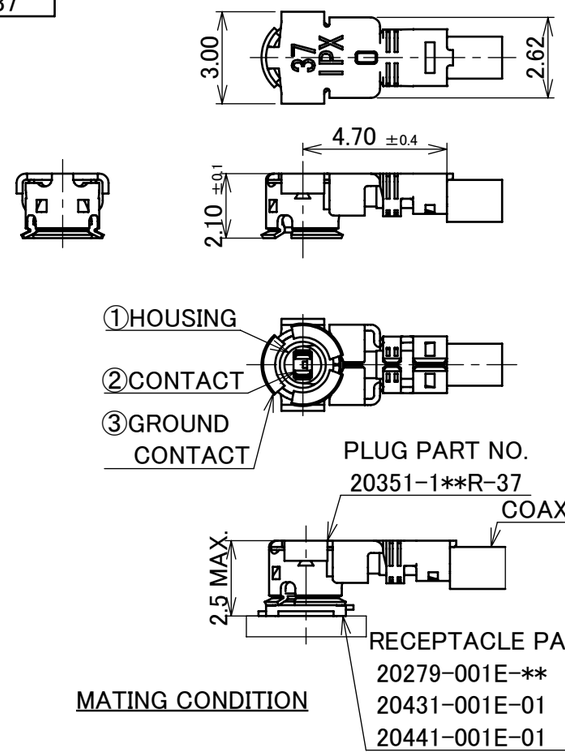
Numbers indicate sequence in which tests are performed.

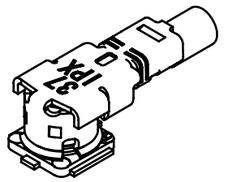
6. Recommended Metal Mask

Refer to drawing for the recommended metal mask thickness and opening dimension.

Recommended P/N	20351-112R-37

PART No.
20351-1**R-37

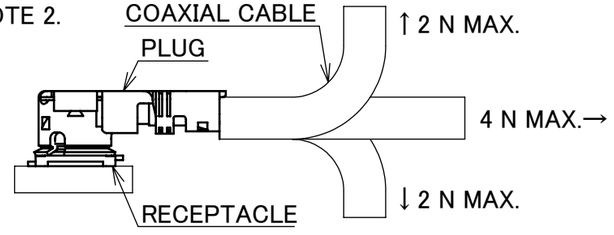




HF RoHS COMPLIANT

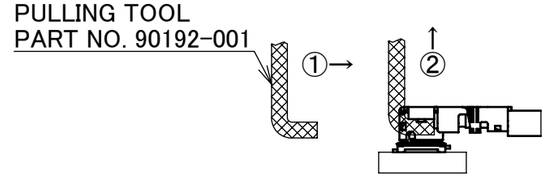
NOTES
1. APPLICABLE CONNECTOR:
   20279-001E-**, 20431-001E-01, 20441-001E-01
2. PERMISSIBLE LOAD OF CABLE AT MATING
3. SUGGESTIONS FOR MATING & UNMATING OPERATION
3-1. MATING
   PLEASE MATE THE CONNECTOR STRAIGHTLY TO VERTICAL DIRECTION AS MUCH AS POSSIBLE, ADJUSTING THE MATING AXIS OF PLUG AND RECEPTACLE. AS EXCESSIVE SLANT ANGLE MATING MAY BREAK THE CONNECTOR, PLEASE DON'T DO IT.
3-2. UNMATING
3-2-1. IN CASE OF UNMATING BY PULLING TOOL
   PLEASE USE THE PULLING TOOL AS THE FOLLOWING DRAWING, AND PLEASE PULL PLUG TO VERTICAL DIRECTION AS DIRECTLY AS POSSIBLE.
3-2-2. IN CASE OF UNMATING DIRECTLY BY HAND
   PLEASE CATCH THE CATCHING AREA OF PLUG, AND PLEASE PULL PLUG TO VERTICAL DIRECTION AS DIRECTLY AS POSSIBLE.
3-3. CRIMP OVER STANDARDS OF OUTER CONDUCTOR
   STANDARDS: LESS THAN 10% FROM TOTAL NUMBERS OF OUTER CONDUCTOR.
   (NUMBERS OF OUTER CONDUCTOR'S CRIMP OVER FROM OUTER CONDUCTOR'S BARREL)
3-4. CAUTION ABOUT HEAT SHRINKAGE TUBES
   PLEASE BE CAREFUL NOT TO MELT HOUSING WHEN USING HEAT SHRINKAGE TUBES. IT WILL BECOME CAUSE OPEN CIRCUIT.
4. TIP OF CONTACT SHOULD BE RECESSED OF HOUSING AFTER CRIMPED ABOUT MATING AREA.
5. THIS IS "Pb-FREE" CONNECTOR.

NOTE 2.

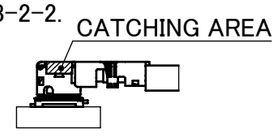


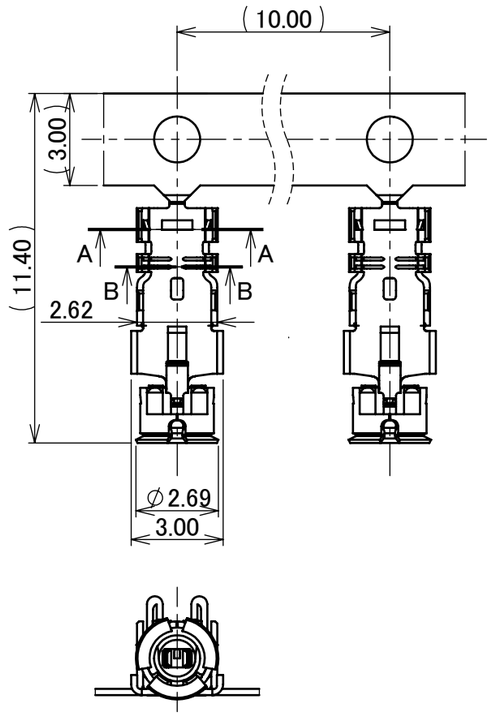
NOTE 3-2-1.

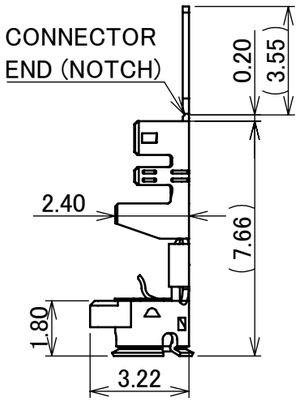
PULLING TOOL
PART NO. 90192-001



NOTE 3-2-2.

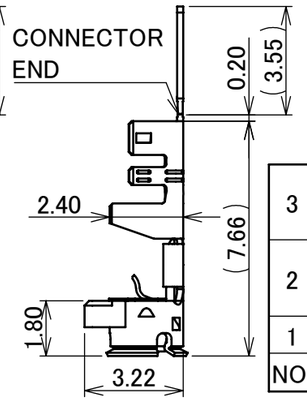






PART NO.
20351-101R-37
20351-102R-37

FOR HAND TOOL
(WITH NOTCH)



PART NO.
20351-111R-37
20351-112R-37

FOR SEMI AUTO TERMINATION MACHINE
(WITHOUT NOTCH)

NO.	DESCRIPTION	MATERIAL	FINISH , REMARKS
3	GROUND CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μm MIN. CONTACT PART Au 0.05 μm MIN.
2	CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μm MIN. CONTACT PART Au 0.10 μm MIN.
1	HOUSING	PBT	UL94V-0, WHITE

REV.	ECN	BY	DATE	APP.
18	Z210168	S.T	2021/02/19	M.T
17	Z200262	TOI	2020/03/05	Y.H
16	Z191013	Haji	2019/08/01	Y.S
15	Z181501	M.N	2018/11/15	Ken
14	Z171151	M.A	2017/10/05	T.M
13	Z150615	Tad	2015/06/04	Tom

REVISION RECORD

ANGLE	±2°	6 OVER 30 MAX.	±0.3
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5

GENERAL TOLERANCE.

DWG.	DATE
T.Hirakawa	2003/09/11
CHK. T.Harada	
APP. K.Katabuchi	

PROJECTION | SERIES No. R8 | CUSTOMER COPY

TITLE: MHF® I
PLUG (1.37)

SCALE 5:1 | UNIT mm | I-PEX

DWG. No. 20351 | SIZE A3 | SHEET 1/5 | REV. 18

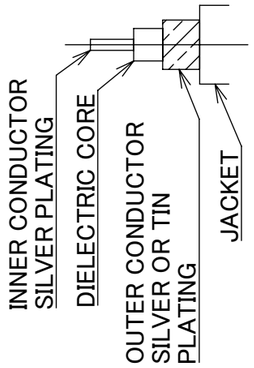
ITEMS	SPECIFICATION
RECOMMENDED APPLICABLE CONNECTOR PART No.	20279-001E-**
RATING VOLTAGE	60 V AC (R.M.S)
RATING FREQUENCY	DC～9GHz
OPERATING TEMPERATURE	233～363 K (-40℃～+90℃)
VSWR	1.3 MAX. AT 0.1～3 GHz, 1.5 MAX. AT 3～6 GHz, 1.9 MAX. AT 6～9 GHz
MAIN CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: 25 mohm MAX.
GROUND CONTACT RESISTANCE	INITIAL: 10 mohm MAX. / AFTER TEST: 15 mohm MAX.
INSULATION RESISTANCE	INITIAL: 500 Mohm MIN. / AFTER TEST: 100 Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	200 V AC, 1 MINUTE
DURABILITY	30 CYCLES
UNMATING FORCE (INITIAL / AFTER TEST)	5 N MIN. / 3 N MIN.
CRIMP STRENGTH	15 N MIN.
PRODUCT SPECIFICATION	PRS-1726
TEST REPORT	TR-12096
PACKING STANDARD	300-233
INSTRUCTION MANUAL	HIM-10002
APPEARANCE CRITERIA No.	QLS-A***

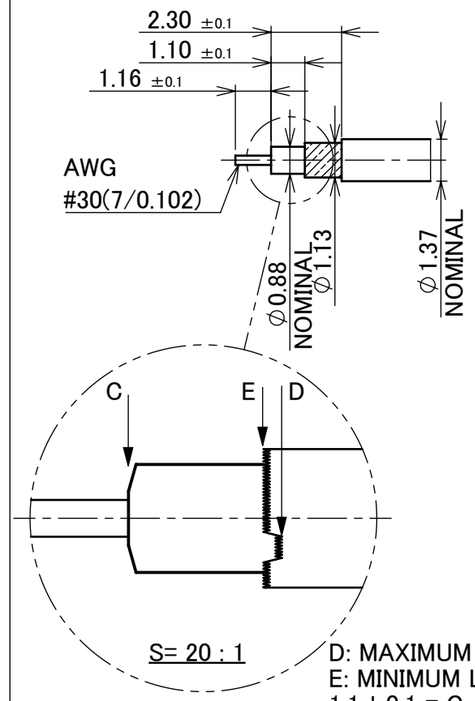
ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION	SERIES No.	CUSTOMER COPY	
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5		R8		
GENERAL TOLERANCE.				TITLE		SCALE	
DWG.		DATE		MHF® I PLUG (1.37)		5:1	I-PEX
CHK.						UNIT mm	
APP.				DWG. No. 20351		SIZE A3	SHEET 2/5 REV. 18

Recommended P/N	20351-112R-37

PART NO. OF NON HALOGEN FREE TYPE	20351-101R-37 / 20351-111R-37
PART NO. OF HALOGEN FREE TYPE	20351-102R-37 / 20351-112R-37

APPLICABLE CABLE NOMINAL DIMENSION

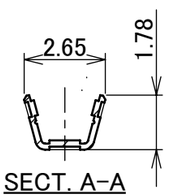




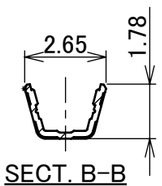
SEE NOTE 6.

D: MAXIMUM LENGTH
E: MINIMUM LENGTH
1.1±0.1 = C-D ≠C-E

BRAIDED SHIELD OF OUTER CONDUCTOR	SINGLE
PART NO. OF HAND TOOL / PART NO. OF SEMI AUTO TERMINATION MACHINE	90233-037 / 90232-037



SECT. A-A

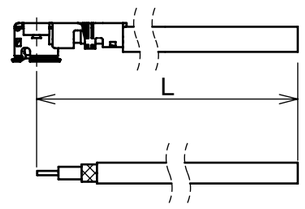


SECT. B-B

CRIMP HEIGHT	CH-1	1.34～1.40
	CH-2	1.36～1.42
	CH-3	1.28～1.34

NOTE 6. MUST NOT USE SOLDER COATED INNER CONDUCTOR.

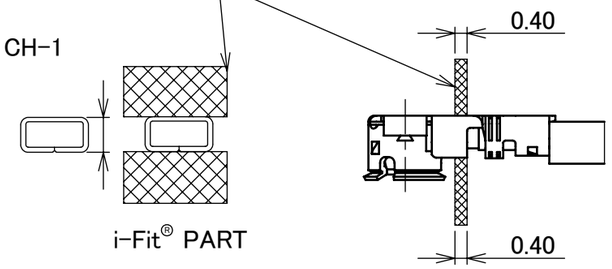
CABLE CUT LENGTH



CRIMP HEIGHT

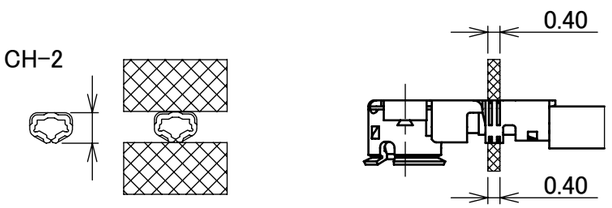
BLADE MICROMETER

CH-1



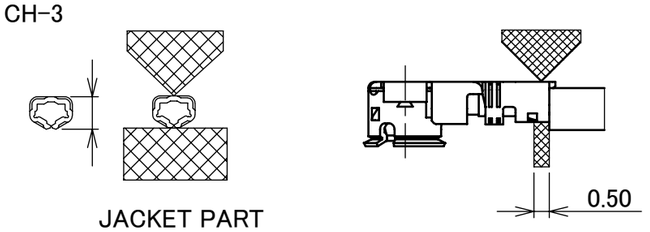
i-Fit® PART

CH-2



OUTER CONDUCTOR PART

CH-3



JACKET PART

ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION	SERIES No. R8
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5		

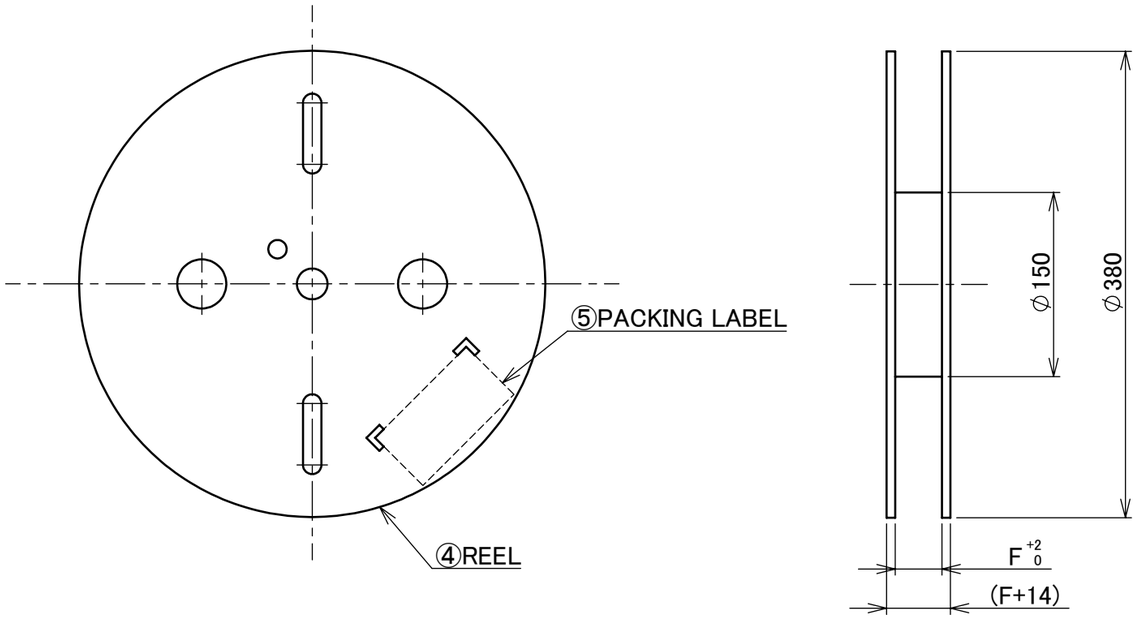
GENERAL TOLERANCE.

DWG. / DATE	TITLE: MHF® I PLUG (1.37)	SCALE: 5:1	I-PEX
CHK.		UNIT: mm	
APP.	DWG. No.: 20351	SIZE: A3	SHEET: 3/5 REV.: 18

CUSTOMER COPY

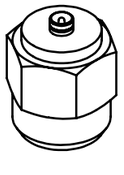
Recommended P/N	20351-112R-37

PART NO.	F	QTY. PER EMBOSS REEL (PIECES / REEL)	QTY. PER PACKING CARTON (REELS / CARTON)
20351-1**R-37	16.0	2,500 / REEL	5 REELS / CARTON = 12,500 PIECES

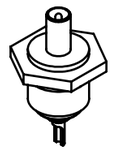


NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
5	PACKING LABEL	–	–
4	REEL	CB	–

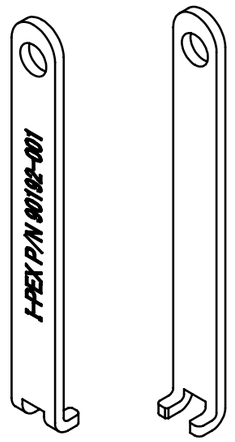
ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION	SERIES No.	CUSTOMER COPY	
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5		R8		
GENERAL TOLERANCE.				TITLE		SCALE	
DWG.		DATE		MHF® I		1:1	I-PEX
CHK.				PLUG (1.37)		UNIT mm	
APP.				DWG. No.		SIZE	SHEET / REV.
				20351		A3	4/5 / 18



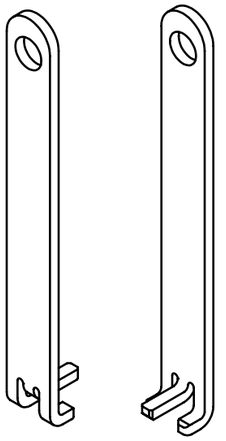
MHF I/II SMA ADAPTOR
PART NO. 90193-001



MHF I/II PLUG INSPECTION CONNECTOR
PART NO. 90194-001



FRONT SIDE BACK SIDE
MHF I/II PULLING TOOL
PART NO. 90192-001



FRONT SIDE BACK SIDE
MHF I PUSHING AND PULLING TOOL
PART NO. 90224-001

ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION	SERIES No.	CUSTOMER COPY	
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5		R8		
GENERAL TOLERANCE.				TITLE		SCALE	
DWG.		DATE		MHF® I		2:1	I-PEX
CHK.				PLUG (1.37)		UNIT	
						mm	
APP.				DWG. No.		SIZE	SHEET / REV.
				20351		A3	5/5 / 18

SAFETY DATA SHEET(SDS)

Issued: February 6 , 2013
Revised: April 19 , 2016

FileNo. 2302-1

1.Chemical Product & Company Identification

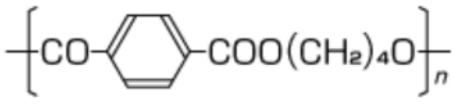
CHEMICALPRODUCT NAME:	DURANEX® 310NF ED3002
NAME OF COMPANY:	WinTech Polymer Ltd.
ADDRESS:	2-18-1 Konan, Minato-ku, Tokyo,108-8280 Japan
SECTION IN CHARGE:	Quality Assurance Dept.
TELEPHONE NUMBER:	03-6711-8605
FACSIMILE NUMBER	03-6711-8616

2. Hazards identification

[GHS CLASSIFICATION]

Physical and Chemical Hazards	:	・Flammable solids : Classification not possible ・Self-reactive substances and mixtures : Not applicable ・Pyrophoric solids : Not classified ・Self-heating substances and mixtures : Classification not possible ・Substances and mixtures, which in contact with water, emit flammable gases : Not classified ・Oxidizing solids : Not classified ・Corrosive to metal : Not classified
Health Hazards	:	・Carcinogeneses : No hazard ・Specific target organ/systemic toxicity (Repeated exposure) : No hazard
Environmental Hazards	:	Classification not possible
[SYMBOL]	:	None
[SIGNAL WORD]	:	None
[HAZARD STATEMENT]	:	None
[PRECAUTIONARY STATEMENTS]		
Prevention	:	・Wash hands thoroughly after handling. ・Wear protective gloves.
Response	:	-
Storage	:	Avoid direct sunlight and store in a well-ventilated place.
Disposal	:	Dispose of contents/container in accordance with local & national regulations.

3. Composition/information on ingredients

SUBSTANCE/MIXTURE	:	Mixture
COMMON CHEMICAL NAME	:	Polybutyleneterephthalate
SYNONYMS	:	Polybutyleneterephthalate(PBT)
INGREDIENTS AND COMPOSITION	:	PBT ≧66.5%, Glass fiber 10%, Carbon black ≦0.5%, Phosphorus flame retardant and others ≦23%
CHEMICAL FORMURA	:	
SERIAL No. IN OFFICIAL GAZETTE	:	7-1039(base resin) (Law Concerning Examination and Regulation of Manufacture, etc., of Chemical Substances)
CAS No.	:	24968-12-5(base resin)
INGREDIENTS CONTRIBUTING TO THE HAZARD	:	Cadmium, lead, hexavalent chromium and mercury are not used in this grade.

4. First-aid measures

INGESTION	:	When a gas generated from the molten polymer has been inhaled, move to area of fresh air without delay and wait until the victim is

recovered. If sick feeling continues, ask a physician for advice.

SKIN CONTACT	:	Cool the contacted skin with clean water without delay, if a contact with the polymer in a molten form. Do not force to remove the solid resin on the skin. If any burns are observed on the skin, ask a physician for advice.
EYE CONTACT	:	Cool and rinse the eye with clean water for at least 15 minutes when the eyes had contact with molten polymer. In case of wearing contact lenses, remove the lenses as soon as possible, and ask a physician for advice. When the eye had contact with the polymer in an ordinary solid form, rinse the eye with clean water without delay. If the discomfort persists, ask a physician for advice.
SWALLOW	:	Help to vomit as much as possible. If sick feeling continues, ask a physician for advice.

5. Fire-fighting measures

EXTINGUISHING MEDIA	:	Water, foam fire-extinguishing agent, powder fire-extinguishing agent, and carbon dioxide gas.
SPECIFIC METHODS	:	Extinguish the fire with water. A method of extinguishing an ordinary fire may be applied. Do not apply water directly to processing machines.
SPECIFIC HAZARDS	:	Incomplete combustion leads to generation of toxic gases such as carbon monoxide or tetrahydrofuran, in addition to carbonic acid gas and water.
SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS	:	In case the fire gained force, use a gas mask or other protective equipment.

6. Accidental release measures

PERSONAL PRECAUTIONS	:	When pellets were spilled on the road or floor, wipe them off with a besom or cleaner not to cause slipping.
ENVIRONMENTAL PRECAUTION	:	Handle the spillage in accordance with provisions given in the "Resin pellet spillage preventive manual", in order to prevent intakes by marine animals and birds.

7. Handling and storage

HANDLING	:	This resin in a pellet form will neither ignite nor explode at room temperatures.
HANDLING 2	:	This pellets spilled on the floor are likely to cause slipping. Remove such spillage at any times.
HANDLING 3	:	For molding work, effective means for local exhaust are required to discharge gases generated by melt processing.
HANDLING 4	:	Avoid inhaling of gases generated in molding work. Do not directly touch resin of high temperature.
HANDLING 5	:	Avoid retaining hot resin in the processing machines for many hours.
HANDLING 6	:	Glass fibers are not generally exposed in a single substance under normal processing and handling conditions as they are compounded in pellets. However, the following measures will be necessary to minimize the exposure to glass fibers or dusts containing glass fibers, when pellets or molded parts containing glass fibers are cut, ground or burnt, depending on environmental and operational conditions. ・Those who are sensitive in skin to glass fiber should wear suitable(protective) clothes to minimize the exposure of their skin. ・Wash working clothes apart from other laundry, so that the latter will not cause contamination with glass fibers. ・Provide the workshop with partitions to prevent diffusion of

glass fiber dusts.
・Pay precautions not to rub face, neck, arms or hands. Wash them with water and gargle after working.
・Keep dust sources totally enclosed.
・Provide local air exhausters and implement periodical inspections and adjustments at least once a year.
・Reduce cutting and grinding processes to the possible minimum, and devise working procedures to minimize dust generation.
・Provide dust-preventive masks, protective glasses and gloves for personal hygiene.
・Determine the operational environment at indoor working places and confirm the effects of environmental improvement.
Note) Glass fibers are, like road dusts, told to be least hazardous to human bodies, but proper measures are required to avoid useless inhaling.

STORAGE	:	Keep the substance away from any fire or heat sources for the sake of safe storage.
STORAGE 2	:	Handle in accordance with municipal rules and regulations.
RECOMMENDED PACKAGING MATERIALS	:	No information.

8. Exposure controls/ personal protection

CONTROL CONCENTRATION	:	None at present
PERMISSIBLE CONCENTRATION	:	OSHA PEL/1985 Max. permissible concentration of inactive powder 15mg/m3 – ditto – (Aspiration) 5 mg/m3 ACGIH TLV/1992 1993 Exposure limit of the powder TWA 10 mg/m3
ENGINEERING MEASURE	:	・When handling dust: Use totally enclosed containers resisting dust explosion. ・When heat melted in molding: Effective local ventilation must be provided.
PERSONAL PROTECTIVE EQUIPMENT		
RESPIRATORY PROTECTION	:	Wear a dust-proof mask.
HAND PROTECTION	:	Wear heat-resisting gloves against burns, when handling molten polymer.
EYE PROTECTION	:	Wear protective glasses or goggles.
SKIN & BODY PROTECTION	:	Wear long sleeve clothes against burns, when handling molten polymer.

9. Physical and chemical properties

APPEARANCE etc.	:	Pellet
BOILING POINT	:	Not applicable
VAPOUR PRESSURE	:	Not applicable
VOLATILITY	:	Not applicable
INITIAL BOILING POINT	:	Not applicable
SUBLIMATION	:	None
MELTING POINT	:	224℃
DENSITY	:	1.40
SOLUBILITY	:	Insoluble in water
FLASH POINT	:	300℃ or higher
IGNITION POINT	:	300℃ or higher
EXPLOSION PROPERTY	:	Not applicable
INFLAMMABILITY	:	None
REACTIVITY WITH WATER	:	None
OXIDIZABILITY	:	None
SELF-REACTIVITY	:	None

DUST EXPLOSIVENESS	:	Upper explosion limit : Not applicable. Lower explosion limit : 35g/m3

10. Stability and reactivity

STABILITY AND REACTIVITY	:	Stable for normal storage or handling.

11. Toxicological information

SKIN CORROSION/IRRITATION	:	No finding.
SERIOUS EYE DAMAGE/IRRITATION	:	Gas generated in drying or melting is irritating eyes and skins.
RESPIRATORY OR SKIN SENSITISATION	:	No finding
ACUTE TOXICITY(INCLUDING LD50)	:	No finding.
SUBACUTE TOXICITY	:	No finding.
CHRONIC TOXICITY	:	No finding.
CARCINOGENECITY	:	This product contains the substance of carcinogenic category 2 in the GHS classification.(CB)
MUTAGENECITY(Micro organisms, chromosomal aberration)	:	No finding.
REPRODUCTIVE TOXICITY	:	No finding.
TERATOGENICITY	:	No finding.
OTHERS(Including generation of hazardous gases by reaction with water, for example)	:	No finding in this report means that there will be no hazard in general, but no proving data available at the time of reporting.
OTHER CAUTIONS	:	With regard to dust, the maximum permissible concentration and limits are fixed by OSHA and ACGIH.
OTHER CAUTIONS 2	:	Information on hazards of glass fibers as filler.

〈Effects on Human Bodies〉

(1) Effects on skin

Stimulation to the skin with glass fibers may be caused when glass fibers diameter is larger than 4.5~5 μm. They give mechanical stimulation followed by itchiness to the skin, but further continuous exposure reportedly results in extinction of stimulation. It may sometimes leads to irritable dermatitis complicated with urticaria or eczema-like reaction. It is, however reported that such dermatitis is not so serious in general and does not last too long. Therefore, skin stimulation can be prevented by proper use of glass fibers.

(2) Effects on Tumor

Investigations made on glass fibers till today reveal that there is neither increase in mortality of glass fiber production workers due to lung cancer or mesothelioma nor such cases reported.

〈Animal Test Report〉

It is suggested that carcinogenecity of mineral fibers is dependent on their shapes rather than on their constituents. According to a report on experiments using 17 kinds of artificial mineral fibers in various sizes prepared by Dr. Stanton of National Cancer Institute, in USA, statistical studies on correlations between the diameter and length of fibers and the coincidence of mesothelioma have revealed that mineral fibers having a diameter smaller than 0.25 μm and a length larger than 8 μm are closely related to the coincidence of cancers. Since these experiments were performed by artificially dosing the subject animals with a large quantity of glass fibers and consequently they are quite different from the actual exposures to human bodies, it is told to be problematic to make a conclusion that mineral fibers are

hazardous to human health, basing on the results obtained from these experiments. Up to the present time, there is no result obtainable to demonstrate a mechanism of glass fibers causing lung cancers in spite of experiment by long exposure to glass fibers with high concentration.

OTHER CAUTIONS 3 : Toxicological information of Carbon black which is an ingredient is shown below. Toxicity of the ingredient does not appear as product for pellet. When dust is generated by cutting and sanding, toxicity appears. Avoid breathing dust and avoid generating dust.

[Carbon black]

Acute toxicity

Oral: Rat LD50 15,400mg/kg GHS Not classified

Dermal: No information

Inhalation: No information

Skin Corrosion/Irritation: No information

Eye Damage/Irritation: No information

Sensitization−Skin: No information

Germ Cell Mutangenicity: No information

Carcinogenicity: IARC 2B; Possible carcinogenic to humans.

Toxicity to Reproduction: No information

Specific Target Organ Toxicity(Single Exposure) No information

Specific Target Organ Toxicity(Repeated Exposure) Category 1 based on the influence on lungs (the hyperplasia of the epithelium, pulmonary fiber symptom) in pneumoconiosis of human and a rat inhalational examination in the range of guidance level Category 1

Aspiration Hazard: No information

REMARKS : Hazards information and so on result from the national classification of carbon black.

12. Ecological information

BIODEGRADABILITY : No finding.

BIOACCUMULATION : No finding.

FISH TOXICITY : No finding.

HAZARDS TO OZONE LAYER : None

13. Disposal considerations

WASTE FROM RESIDUES : This is designated as waste plastics among industrial wastes by the Wastes Disposal Law. Disposal waste pellets through licensed wastes handlers or local autonomous bodies if they are handling wastes disposal.

WASTE FROM RESIDUES 2 : When disposed by incineration, use the well controlled incinerators in accordance with the Wastes Disposal Law, Air Pollution Control Law and Water Pollution Prevention Law.

14. Transport information

UN CLASSIFICATION NUMBER : Not restricted for ICAO/IATA.

OTHER CAUTIONS : Handle with care so as not to give damages to containers or not to be subjected to wetting.

OTHER CAUTIONS 2 : Secure the containers firmly so as not to cause collapsing.

15. Regulatory information

WASTE DISPOSAL LAW : Waste plastics among industrial wastes.

INDUSTRIAL SAFETY AND HEALTH LAW : Designated as Cabinet order No.93 Annex 9 No.130.(Carbon black)

16. Other information

HANDLING OF THE DETAILS GIVEN ABOVE	:	This SDS is the English version translated from the Japanese SDS which is prepared for domestic use. Details given above are based on references, information and data available at this moment, but no warranty can be made on exactness of these details. They are also prepared on the assumption that the product will be handled in a normal way. For special handling, adequate safety and environmental measures should be taken in respect to its applications. Our products are not specifically intended for implants for medical and dental applications, and therefore they are not recommended for such applications. "No finding" in this report means that there will be no hazard in general, but no proving data is available at the time of reporting.
WHERE TO CALL FOR FURTHER INFORMATION	:	WinTech Polymer Ltd. Quality Assurance Dept. Tel. No 03-6711-8605

1. Product name: Phosphor bronze plates and strips (JIS H3110(2012)) : C5050, C5111, C5102, C5191, C5212
Phosphor bronze plates and strips for spring (JIS H3130(2012)) : C5210, C5240

Company Name : HARADA METAL INDUSTRY CO., LTD.
Address : 5-9-25 HONCHO, TODA-SHI SAITAMA 335-0023, JAPAN
Charge Section : Quality Assurance Division Person in charge : MITSUHARU ISHIZAWA
Tel. : '+81-48-441-5113 FAX. : '+81-48-441-2058
Urgent call : Quality Assurance Division Tel. : '+81-48-441-5113
Revision date : 2016/3/22 Issue date : 2017/5/11

2. Dangerous Noxious Kind

GHS Classification

① Copper

Physicochemical risk	Explosives Not applicable	
	Combustibility, flammable gas	Not applicable
	Combustibility, flammable aerosol	Not applicable
	Combustion Enhancing gas・oxidized gas	Not applicable
	High Pressure Gas	Not applicable
	inflammable liquid	Not applicable
	Flammable Solid	Not classify
	Self-reactive substance and mixture	Not applicable
	Spontaneous-ignitable liquid	Not applicable
	Spontaneous-ignitable solid	Not applicable
	Substances and mixture liable to spontaneous	Not classify
	Substances which, in contact with water, emit flammable gases	Not classify
	Oxidizing liquid	Not applicable
	Oxidizing solid	Not applicable
	Organic peroxides	Not applicable
	Metal corrosives substances	Not classify
Hazardousness for the health	acute toxicity (oral)	Not classify
	acute toxicity (skin)	Not classify
	acute toxicity (Breathe in: Gas)	Not applicable
	acute toxicity (Breathe in: Steam)	Not classify
	acute toxicity (Absorption: Fine particles)	Not classify
	acute toxicity (Breathe in: Mist)	Not classify
	Skin irritation	Not classify
	Serious injury characteristics for eyes・eye irritation	Not classify
	Respiratory organs sensitization	Not classify

	Skin sensitization	Not classify
	Germ-cell mutagenicity	Not classify
	Carcinogenic	Not applicable
	Reproduction toxicity	Not classify
	Specific Target Organ・Systemic toxicity (Single exposure) Category 3 (respiratory tract irritation)	
	Symbol 	
	Specific Target Organ・Systemic toxicity (Repeated exposure) Category 1 (Liver)	
	Symbol 	
	Aspiration hazards	Not classify
Environmental hazards	Aquatic toxicity (acute)	Not classify
	Aquatic toxicity (chromic)	Category 4
		No symbol

② Tin

Physicochemical risk	Explosives Not applicable	
	Combustibility, flammable gas	Not applicable
	Combustibility, flammable aerosol	Not applicable
	Combustion Enhancing gas・oxidized gas	Not applicable
	High Pressure Gas	Not applicable
	inflammable liquid	Not applicable
	Flammable Solid	Not classify
	Self-reactive substance and mixture	Not applicable
	Spontaneous-ignitable liquid	Not applicable
	Spontaneous-ignitable solid	Not applicable
	Substances and mixture liable to spontaneous	Not classify
	Substances which, in contact with water, emit flammable gases	Not classify
	Oxidizing liquid	Not applicable
	Oxidizing solid	Not applicable
	Organic peroxides	Not applicable
	Metal corrosives substances	Not classify

Hazardousness for the health	acute toxicity (oral)	Not classify
	acute toxicity (skin)	Not classify
	acute toxicity (Breathe in : Gas)	Not applicable
	acute toxicity (Breathe in : Steam)	Not classify
	acute toxicity (Absorption : Fine particles)	Not classify
	acute toxicity (Breathe in : Mist)	Not classify
	Skin irritation	Not classify
	Serious injury characteristics for eyes・eye irritation	Not classify
	Respiratory organs sensitization	Not classify
	Skin sensitization	Not classify
	Germ-cell mutagenicity	Not classify
	Carcinogenic	Not applicable
	Reproduction toxicity	Not classify
	Specific Target Organ・Systemic toxicity (Single exposure)	Not classify
	Specific Target Organ・Systemic toxicity (Repeated exposure)	Category 1 (Lung)
	Symbol	
	Aspiration hazards	Not classify
Environmental hazards	Aquatic toxicity (acute)	Not applicable
	Aquatic toxicity (chromic)	Not applicable
		No symbol

Name of the kind : There is not it for a product.
Danger : No
Hazardous property : Cause metal fever and respiratory stimulation symptom when inhale Hume.

3. Composition, Iingredient Information

Constitution element : Copper、Tin、Phosphor

Ingredient and content (Impurities :Pb、Fe、Zn)

Chemical ingredient	Content (wt.%)							CAS No.
	C5240	C5210	C5212	C5191	C5102	C5111	C5050	
Cu	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	7440-50-8
Sn	9.0～11.0	7.0～9.0	7.0～9.0	5.5～7.0	4.5～5.5	3.5～4.5	1.0～1.7	7440-31-5
P	0.03～0.35	0.03～0.35	0.03～0.35	0.03～0.35	0.03～0.35	0.03～0.35	0.15 max.	7723-14-0
Pb	0.02 max.	0.02 max.	0.02 max.	0.02 max.	0.02 max.	0.02 max.	0.02 max.	7439-92-1
Fe	0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.	7439-89-6
Zn	0.20 max.	0.20 max.	0.20 max.	0.20 max.	0.20 max.	0.20 max.	0.20 max.	7440-66-6

Chemical formula or Constitutional formula : Cu－Sn－P

Official daily gazette public announcement reference number (CSCL, ISHL) : Non-pertinence

CAS No. : Ref. Upper table

UN classification and UN number : Non-fall under dangerous materials in the definition of the UN

4. First aid step

When it processed a product, and powder, earthly affairs occurred.

When it was in the eyes : Wash eyes with clean water calmly for minimum 15 minutes and take a medical advice immediately.

When stuck to skin : Wash adhesion department with soapy water and wash it away with a large quantity of water.

When inhaled it : When inhaled it abundantly, move a patient to the place where the air is fresh promptly, rest quietly, keep warm and take a medical advice immediately.

When it processes a product

When burnt skin with a product at the time of heat-treatment processing : Cool the part with a large quantity of water in the case of the slight burn promptly. Consult the doctor in the case of the severe burn promptly.

When a product is processed in the shape of a tip and may swallow it

When swallowed it : When swallowed it abundantly, wash in the mouth with water and take a medical advice immediately.

5. Step at the time of the fire

Fire extinguishing method : Not apply it for noninflammability

Digestive : Not apply it for noninflammability

6. Step at the time of the leak

Not apply it for solid

7. Handling and attention in the storage

Handling : Because there is danger to cut a hand in the edge of the product, cannot touch it barehanded.
When the powder expired at the time of the cut, not be in the eyes and not breathe it.
Because it is heavy goods, there is the danger of the fall and warns the handling enough.
Because there are spring characteristics, warn the coil end splashes, and not to be hurt.

Storage : Do not let come in contact with the chemical substance such as strong acid and alkali.
Keep it on the flat place. Because cause the collapse of cargo, be careful to accumulation.

8. Revelation hedge

Management density : Not prescribed

Permission density : No rule as the product, but refers to a list shown below when Hume/mine dust occurs.

Unit: mg/m^3

Element	Advice level of the Nihon Sangyo hygiene society	ACGIH(TLV)	OSH(PEL)
Cu	No rule	Time Weighted Average Fume 0.2 Mine dust 1.0 Short term exposure limit Mine dust 2.0	Fume 0.1
Sn	No rule	Time Weighted Average Inorganic compound 2.0 Organic compound 0.1 Short term exposure limit Inorganic compound 4.0 Organic compound 0.2	
P	0.1	Time Weighted Average 0.1 Short term exposure limit 0.3	

Anti-facilities measure : Be unnecessary, but it is usually desirable to perform the facilities measures such as local exhausts when mine dust or Hume occur, and it cannot maintain density less than a standard.

Protection tool : When mine dust, small tip, lathe waste or powder occurs at the time of product processing, wear protection mask and protection glasses.
When may be damaged for fingers, wear gloves to protect the fingers.
Wear the established working clothes and safety boots.

9. Physics and chemical property

Appearance : Red solid which there is luster

Smell : No smell

Boiling point : Cu 2630℃、Sn 2275℃、P —

Solubility : Not dissolve in water

Property according to the alloy

	C5240	C5210	C5212	C5191	C5102	C5111	C5050
Specific gravity	8.78	8.82	8.82	8.85	8.88	8.89	8.90
Melting point(Liquidus)	1000℃	1020℃	1020℃	1045℃	1050℃	1060℃	1075℃

10. Danger information (Stability / Reactivity)

Flash point : —℃

Ignition point : —℃

Explosion range : No explosion range

Stability, Reactivity : Inert and Stable

11. Noxious information (Case about the person and epidemiologic information)

Because no noxious information as the alloy, describe below the noxious information of the simple substance element to constitute.

Corrosive for skin : No data

Pungency (For skin and eye) : The copper rarely causes contact-related cutitis.

Acute toxicity (including LD-50) : Copper powder LD50 Oral mouse＞4000mg／kg、A symptom of the acute intoxication such as nausea, vomiting and the feeling of weakness comes out when swallow it. A cough, pain in the chest, a fever attack is caused when breathe in mine dust and Hume. There is extremely little toxicity of tin.
Yellow phosphorus is the toxic about phosphorus. As a symptom of the acute intoxication, there are vasculopathy, quality of hepatization (yellow liver atrophy), feeling like vomiting, vomiting, diarrhea, the fatty degeneration of the liver, the kidney, liver enlargement, jaundice, hematuria, dyspnea.

Nubacute toxicity : No data

Chronic toxicity : It becomes the tin storage disease when I inhale mist mine dust of tin for a long term, but there is not the pulmonary slow-up. An appetite decline, indigestion, a weight loss, anemia, jaundice, mucous membrane bleeding, proteinuria, the conjunctiva of eyes include bleeding on yellowing, retina as a symptom of the chronic poisoning of phosphorus.

Original cancer characteristics : No

Original variation characteristics (Microbe, Chromosome aberration) : No

Reproduction toxic : No

Teratogenicity : No

Others (etc. outbreak of the poisonous gas) : No

12. Environmental influence information

Resolvability	: No data
Accumulation characteristics	: No data
Toxicity for the fish	: TLm(Cu ppm) $CuSO_4$ 48hr Rainbow trout 0. 038～0. 8ppm
Others	: No data

13. Attention in the disposal

Entrust recycling supplier.

14. Attention in the transport

When transport by vehicle, be careful not to get wet for rainwater. Prevent a fall, collapse of cargo.

15. Application laws and ordinances

Particularly no

When mine dust occurs : Dust obstacle Ordinance on Prevention Article 2 Clause 1 of the Occupational Safety and Health Act

OSHA(Occupational Safety & Health Admin istration)

16. Others(The reference of mention contents, references cited)

Reference : HARADA METAL INDUSTRY CO., LTD. QUALITY ASSURANCE DIVISION

References cited : Metal glossary of terms (metal society)

: Danger, harmful manual of the chemical substance revision 4 (Association of prevention of central work-related accident)

: Manual addicted to industry Enlarged edition(Medicine tooth medicine publication Co., Ltd.)

: Dangerous materials handbook(Maruzen publication)

: 100 kinds of main chemical articles toxic data special report(Foreign countries technical data research institute Co., Ltd.)

: Iwanami physics and chemistry dictionary revision 3 enlarged edition (Iwanami Shoten)

: The basics and engineering of copper and the copper compound metal Revised edition(Japan copper and brass association)

: STANDARDS HANDBOOK Part2－Alloy Data Eight Edition1985(COPPER DEVELOPMENT ASSOCIATION)

: SAX'S DANGEROUS PROPERTIES OF INDUSTIEL MATERIALS

: Dangerous noxious indication system of a plain chemical substance(The Department of Labor Industrial Safety and Health Department chemical substance Security Research Division)

: JIS handbook Non-Ferrous Metals & Metallurgy(Japan Standards Association)

: Metal data book(Maruzen publication)

: A list of carcinogens and list of sensitization-related materials

* Japanese : The classification of the carcinogen and the standard－List of carcinogens－(Japanese chemical substance security, clearing house C0., Ltd. 1992)

* Ehglish : JARC Monographs of the Evaluation of Car cinogenic Risk of Chemicals to Humans. vol. 1～54(1973～) Supplemen(1988)

We make the mention content based on a document, information, data available at present, but, about the contents, are not a thing forming any guarantee. We ask after we refer to these when we handle it, and having understood that it is necessary to take appropriate measures depending on the actual situation such as the individual handling in the responsibility of the handler so that it is utilized.

XFR 4840 GF10 (w), 310NF (w) - PLASTICS - COMPONENT

PLASTICS - COMPONENT

File Number: E213445

Yellow Card®

COMPANY

POLYPLASTICS CO LTD
18-1 KONAN 2-CHOME
MINATO-KU, TOKYO 108-8280 Japan

MODEL INFO

Duranex: XFR 4840 GF10 (w), 310NF (w)
Polybutylene Terephthalate (PBT) , furnished as pellets
--(w) Virgin and regrind up to 50% by weight inclusive, have the same flame characteristics only.

FLAMMABILITY PROPERTIES	NOMINAL VALUE	TEST METHOD
Flammability		
0.75 mm, Color: ALL	V-0	ANSI/UL 94, IEC 60695-11-10
1.5 mm, Color: ALL	V-0	ANSI/UL 94, IEC 60695-11-10
3.0 mm, Color: ALL	5VA V-0	ANSI/UL 94
3.0 mm, Color: ALL	V-0	IEC 60695-11-10
3.0, Color: ALL	5VA	IEC 60695-11-20

ELECTRICAL PROPERTIES	NOMINAL VALUE	TEST METHOD
Hot-wire Ignition (HWI)		UL 746A
0.75 mm	1 PLC	
1.5 mm	1 PLC	

3.0 mm	1 PLC		
High Amp Arc Ignition (HAI)			UL 746A
0.75 mm	0 PLC		
1.5 mm	0 PLC		
3.0 mm	0 PLC		
Comparative Tracking Index (CTI)	1 PLC		UL 746
Dielectric Strength	24	kV/mm	ASTM D149
High Voltage Arc Tracking Rate (HVTR)	0 PLC		
Volume Resistivity	1.0E+14	ohms·cm	ASTM D257/IEC 60093
High Voltage, Low Current Arc Resistance	5 PLC		

THERMAL PROPERTIES	NOMINAL VALUE		TEST METHOD
Relative Thermal Index - Electrical Strength			UL 746B
0.75 mm	130	°C	
1.5 mm	130	°C	
3.0 mm	130	°C	
Relative Thermal Index - Mechanical Impact			UL 746B
0.75 mm	125	°C	
1.5 mm	125	°C	
3.0 mm	125	°C	
Relative Thermal Index - Mechanical Strength			UL 746B
0.75 mm	125	°C	
1.5 mm	125	°C	
3.0 mm	125	°C	

Report Date: 2006-07-24
Revision Date: 2012-11-27

SPECIFICATION FOR APPROVAL

DOCUMENT: A3130SP002

STYLE： COAXIAL CABLE

SIZE: 30AWG x 1C
SP 7/0.107

RECOGNIZED: UL 1979
MEET VW-1

EU Directive 2011/65/EU (RoHS2)

WONDERFUL HI-TECH CO.,LTD

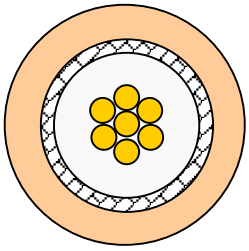
OFFICE：72WU KONG 6TH ROAD,
WU KU IND. DISTRICT
TAIPEI HSIEN,TAIWAN

TEL：(02)22988033
FAX：(02)22988031-2

FACTORY：17 PEI YUAN ROAD,
CHUNG-LI IND. PARK
TAIWAN, R.O.C.

TEL：(03)4527777
FAX：(03)4622419

WONDERFUL HI-TECH CO., LTD
SPECIFICATION

STYLE	105℃ 30V UL1979		DOCUMENT NO : A3130SP002
SIZE	30 AWG		ESTABLISHED DATE: Mar/04/2005
STANDARD : MIL-C-17			
Conductor	Size	AWG	30
	Material	----	Silver-Coated Copper
	Conductors No.	----	7
	Conductors Size	mm	0.107±0.008
	O.D.	mm	0.32±0.03
Insulation	Average Thickness	mm	0.30± 0.03
	Diameter	mm	0.92±0.03
	Material	----	FEP
	Color	----	Clear
Braid	Material	----	Tinned Copper
	Construction	mm	16 / 6 / 0.05
	Coverage	%	96
Jacket	Average Thickness	mm	0.13±0.05
	Diameter	mm	1.37±0.05
	Material	----	FEP
	Color	----	ACCORDING TO CUSTOM
Marking			
Drawing			

MAKER：Talis Huang CONFIRM：W.J. Wang APPROVAL： Glen Lin

WONDERFUL HI-TECH CO., LTD.
SPECIFICATION

Electrical & Physical Properties			
Item			30 AWG
Rating Temperature & Volt			105℃ & 30V
Conductor Resistance			314 OHM/KM/20℃ MAX.
Insulation Resistance			3000 MEGA OHM-KM MIN.
Dielectric Strength			AC 500V/Minute
Spark Test			1.0 KV
Insulation	Unaged	Tensile Strength	2500 PSI MIN.(1.76 Kg / ㎟)
		Elongation	200% MIN.
	Aged	Tensile Strength	**UNAGED MIN 75%(168HRS×232℃)**
		Elongation	**UNAGED MIN 75%(168HRS×232℃)**
Jacket	Unaged	Tensile Strength	2500 PSI MIN.(1.76 Kg / ㎟)
		Elongation	200% MIN.
	Aged	Tensile Strength	**UNAGED MIN.75%(168HRS×232℃)**
		Elongation	**UNAGED MIN.75%(168HRS×232℃)**
Nom. Impedance			50 ± 3 Ohms
Nom. Capacitance			96 ± 3 pF/m
Nom. Vel. of Prop.			69%
VSWR (0 – 6 GHZ)			Max 1.35
VSWR (6 – 8 GHZ)			Max 1.45
BEND RADIUS			Min. 6mm
Operation Temperature			-40~200℃
Storage Temperature			-40~200℃

		Frequency	Reference value
Attenuation	dB/1m	1.0GHz	1.6
		2.0GHz	2.3
		2.4GHz	2.5
		2.5GHz	2.6
		5.15GHz	3.9
		5.35GHz	4.0
		6.0GHz	4.3
		7.2GHz	5.3
		8.0GHz	5.8

The above values may be affected by processing and connector itself, the information is for engineering reference only.

Execution Date: 2021/02/26
Revised Date: 2022/02/22

Safety Data Sheets
(SDS)

1. Chemicals and company information

Name of chemicals	FCM H 2877 BLACK
Supplier company name	DAINICHISEIKA COLOR & CHEMICALS MFG. CO LTD.
Address	HEADQUARTERS : 1-7-6 Nihonbashi Bakuro-cho, Chuo-ku, Tokyo 103-8383 JAPAN TOKYO PLANT : 1-9-4 Horinouchi, Adachi-ku, Tokyo 123-8555 JAPAN
Department	Chemical Safety Control Section, Quality Assurance Department, Plastic Colors No.2 Division
Contact Dept	
Telephone	
Fax	
Mail address	
Emergency phones	+81-3-3899-1117
Product reference number	7003-009724-02

2. Hazards identification

GHS classification of chemicals

PHYSICAL HAZARDS	
Flammable gases	Not classified
Oxidizing gases	Not classified
FLAMMABLE LIQUIDS	Not classified
HEALTH HAZARDS	
ACUTE TOXICITY (Oral)	Not classified
ACUTE TOXICITY (Dermal)	Classification not possible
ACUTE TOXICITY (Gases)	Not classified
ACUTE TOXICITY (Vapours)	Classification not possible
ACUTE TOXICITY (Dusts and Mists)	Classification not possible
SKIN CORROSION/IRRITATION	Not classified
SERIOUS EYE DAMAGE/EYE IRRITATION	Not classified
RESPIRATORY SENSITIZATION	Classification not possible
SKIN SENSITIZATION	Classification not possible
GERM CELL MUTAGENICITY	Classification not possible
CARCINOGENICITY	Classification not possible
REPRODUCTIVE TOXICITY	Classification not possible
EFFECTS ON OR VIA LACTATION	Classification not possible
Specific target organ toxicity,single exposure	Classification not possible
Specific target organ toxicity,repeated exposure	Classification not possible
Aspiration hazard	Classification not possible
ENVIRONMENT HAZARDS	
Short-term(acute)hazardous to the aquatic environment	Not classified
Long-term(chronic)hazardous to the aquatic environment	Classification not possible
HAZARDOUS TO THE OZONE LAYER	Classification not possible

Label elements

Signal/symbol	Not applicable
Signal Word	
Hazard statement	
Precautionary statements	

3. Composition/information on ingredients

Single substance/Mixture : Mixture

Chemical name or common name :

Ingredient and content rate :

Component	Industrial Safety and Health Act Article 57 - 2 Target Name / PRTR Act Target Name	Content rate(%)	Official Notice No.	CAS No.	Regulations
Carbon black	Carbon black / —	5～10	(5)-3328 or (5)-5222	1333-86-4	1,12

PRTR (Law concerning Pollutant Release and Transfer Register) are listed in 15.Regulations

Regulations (in Japan)
1: Industrial Safety and Health Act(Article 57-2)
12: Industrial Safety and Health Act (Article 57)

Contents: pigment, fluorine resin(FEP), etc.

4. First-aid measures

After inhalation : Remove immediately the victim from the contamination to fresh air. Make him blow one's nose and gargle and get medical attention.
After skin contact : Wash with water and soap.
After eye contact : Rinse immediately with plenty of water for at least 15 minutes and get medical attention.
After swallowing : Rinse mouth with water and get medical attention immediately.

5. Fire-fighting measures

Appropriate fire extinguisher :
- Chemical dry powder, foam, carbon dioxide, dry sand, wet chemical fire-suppressant spray.

The way of fire-fighting in certain way :
- Use indicated extinguishing media.
- In case of fire, put on a respiration and chemical-proof protective clothing. FEP resin generates hazardous particles, fumes, hydrogen fluorides and gases such as hydrogen fluoride gas in combustion or pyrolytic reaction.

6. Accidental release measures

Notes on the body, protective equipment and emergency measures :
- Contamination and waste should be disposed according to the related laws.

Notes on the environment :
- Do not discharge into the environment.

Collection, neutralization, containment and cleanup methods, equipment :
- Contain into empty reclosable container as much as possible.

7. Handling and storage

Handling :

The notice for the safe handling
- Wear proper protective equipment not to swallow or contact with eyes, skins and clothes.
- Do not eat, drink or smoke When using this product.

Storage :

The technical measure , The material which prohibits contamination , The container and the materials for packaging
- Store in with keeping away from high-temperature, fire, humidity, water and direct sunlight.

8. Exposure controls/personal protection

Standard control concentration and tolerance concentration :

Component	Standard control concentration	ACGIH(TWA)	Japan Society for Occupational Health
Carbon black	—	TWA:3mg/m3 STEL:-	4mg/m3(Class 2 dust)

*:Maximum tolerance concentration

Protective equipment : Wear proper respirator.
Use personal protective gloves if needed.
Use proper safety spectacles/goggles.
Use personal protective clothing and face shield if needed.

9. Physical and chemical properties

Physical-chemical properties of the product :

Physical state	: pellet
Color	: Black
Odor	: No data
Melting point/Freezing point(℃)	: 250～270
Boiling point or initial boiling point and boiling range(℃)	: No data
Flammability	: No data
Lower and upper explosion limit / flammability limit	: No data
Flash point(℃)	: No data
Auto-ignition temperature(℃)	: No data
Decomposition temperature(℃)	: No data
pH	: No data
Kinematic viscosity	: No data
Solubility	
Water	: insoluble
Organic solvent	: No data
Partition coefficient n-octanol/water (log value)	: No data
Vapor pressure	: No data
Density and/or relative density	: No data
Relative vapour density	: No data
Particle characteristics	: No data

Physical-chemical properties of the components :

Component	Boiling point (℃)	Spec. gravity Water=1	Solubility in water	Vapor press. (kPa)	Vapor density Air=1	Flash point (℃)	Ignition temp. (℃)	Explosion limit (vol%)	LogPo/w	Source
Carbon black	No data	2.0±0.2	insoluble	No data	No data	No data	No data	No data	No data	No data

10. Stability and reactivity

Reactivity :
- NO DATA

Potential hazardous reaction stability :
- Stable when kept below normal temperature.
- The rate of resin degradation is accelerated at 400℃ or more.

Conditions should be avoided :
- Avoid from heat or heating.

Decomposition of hazardous materials :
- Generate fluorine gas and fluorine compound gas at resin degradation.

11. Toxicological information

Hazard of Product

ACUTE TOXICITY (Oral)	: No data
ACUTE TOXICITY (Dermal)	: No data
ACUTE TOXICITY (Gases)	: No data
ACUTE TOXICITY (Vapours)	: No data
ACUTE TOXICITY (Dusts and Mists)	: No data
Skin corrosion/irritation	: No data
Serious eye damage/irritation	: No data
Respiratory or skin sensitization	: No data
Germ cell mutagenicity	: No data
Carcinogenicity	: No data
Reproductive toxicity	: No data
Specific target organ toxicity,single exposure	: No data
Specific target organ toxicity,repeated exposure	: No data
Aspiration hazard	: No data

Hazardous of Components(GHS)-1:

Component	ACUTE TOXICITY Oral mg/kg	ACUTE TOXICITY Dermal mg/kg	ACUTE TOXICITY Gases ppmV	ACUTE TOXICITY Vapours mg/l	ACUTE TOXICITY Dusts & Mists mg/l	SKIN CORROSION /IRRITATION	SERIOUS EYE DAMAGE/EYE IRRITATION
Carbon black	Not classified (15400mg/kg)	Classification not possible	Not classified	Classification not possible	Classification not possible	Not classified	Not classified

Hazardous of Components(GHS)-2:

Component	RESPIRATION SENSITIZATION /SKIN SENSITIZATION	GERM CELL MUTAGENICITY	CARCINO-GENICITY	REPRODUCTIVE TOXICITY	SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE	SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE	ASPIRATION HAZARD
Carbon black	RESPIRATION SENSITIZATION :Classification not possible SKIN SENSITIZATION :Classification not possible	Classification not possible	Classification not possible	Classification not possible	Classification not possible	Classification not possible	Classification not possible

About the classification of the carbon black

Because the product form becomes a thing except the fine particle, to be carcinogenic is supposed "" Classification not possible "" and it judges a specific target-organ toxicity (the repeated exposure) to be "" Classification not possible "".

12. Ecological information

Hazard of Product

Toxicity	: No data
Hazardous to the aquatic environment	: No data
Persistence and degradability	: No data
Bioaccumulative potential	: No data
Mobility in soil	: No data
Hazardous to the ozone layer	: No data

Hazardous to the Environment of Components :

Component	SHORT-TERM(ACUTE)HAZARDOUS TO THE AQUATIC ENVIRONMENT	LONG-TERM(CHRONIC)HAZARDOUS TO THE AQUATIC ENVIRONMENT	HAZARDOUS TO THE OZONE LAYER
Carbon black	Not classified	Classification not possible	Classification not possible

13. Disposal considerations

Residual waste :

- Outsource to licensed industrial waste disposer only.

Contaminated containers and packaging :

- Dispose the empty containers after cleaning the contents completely.
- Outsource to licensed industrial waste disposer only.

14. Transport information

Notes :

- Check for leakage and load carefully to avoid rough handling.
- Take necessary steps to prevent from collapsing.

UN Identification Number	: Not applicable
UN Proper Shipping Name	: Not applicable
UN classification	: Not applicable
Guide Number	: Not applicable

Regulatory information when there are domestic regulations

Marine transport	: No data
Air transportation	: No data
Land transportation	: No data

15. Regulatory information (in Japan)

- Industrial Safety and Health Act(Article 57-2)(SDS required)

Industrial Safety and Health Act (Article 57-2)

Target Name	Content rate(%)
Carbon black	5～10

Pollutant Release & Transfer Register

Target Name	Cabinet Order No.	Division to Manage Chemicals	Content rate(%)
—	—	—	—

16. Other information

Reference

- National Institute of Technology and Evaluation Agency GHS classification results database
- SDS of raw materials
- The fluoropolymers institute text: Published by JAPAN FLUOROPOLYMERS INDUSTRY ASSOCIATION.
- The fluoropolymers resin handling manual: Published by JAPAN FLUOROPOLYMERS INDUSTRY ASSOCIATION.
- SDS of FEP resin: DU PONT-MITSUI FLUOROCHEMICALS CO.,LTD. Daikin Industries, Ltd.

The request :

- This safety data sheet is the one to have concisely gathered the matters which must be careful to use our product safely.
- The contents in this safety data sheet are constituted according to the available literature, information and data to the best of our knowledge to date, and is subject to revision with regards to new findings through development of technologies.
  The designated purpose is to provide information and therefore no warranty expressed or implied is hereby made.
- Being this product developed and manufactured for general industrial applications, it is the full responsibility of the recipient of the product, to determine and to ensure its safety when used in the intended application requiring special care.
- The notice is one for usual handling. The properly concerned decision of the handling of this product go about the responsibility of the user.
- SDS is normally based on Japanese legislation/law.
- This SDS is an information source and never guarantee safety and quality of product.

Safety data sheet

Printing date 24.11.2015 *Version number 2* *Revision: 24.11.2015*

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: NEOFLON FEP NP-3180，NP-3160，NP-2060，NP-2050，NP-2040，NP-2030
Article number: NP-3180，NP-3160，NP-2060，NP-2050，NP-2040，NP-2030
1.2 Relevant identified uses of the substance or mixture and uses advised against:
No further relevant information available.

1.3 Details of the supplier of the safety data sheet DCC-20076
Manufacturer/Supplier:
DAIKIN FLUOROCHEMICALS(CHINA) CO.,LTD
NO.8 JinYu Road(West)Advanced Materials Industrial Park,Changshu,Jiangsu 215522,China
TEL:(+86)512-5232-2266
FAX:(+86)512-5232-2366

Further information obtainable from: http://www.daikinchem.com.cn
1.4 Emergency telephone number: +86-512-5232-0949

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
The substance is not classified according to the CLP regulation.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008: Not applicable
Signal word: Not applicable

SECTION 3: Composition/information on ingredients

Information on ingredients:

25067-11-2 FEP 100%

SECTION 4: First aid measures

4.1 Description of first aid measures
General information: Seek medical treatment.
After inhalation: In case of inhaling decomposed gases: supply fresh air and consult a doctor in case of complaints.
After skin contact:
Immediately wash with water and soap and rinse thoroughly.
After contact with the molten product, cool rapidly with cold water.
Consult a doctor in case of complaints.
After eye contact:
Rinse opened eye for several minutes under running water.
Consult an ophthalmologist in case of complaints.
After swallowing: If symptoms persist consult a doctor.
4.2 Most important symptoms and effects, both acute and chronic: No further relevant information available.
4.3 Indication of any immediate medical attention and special treatment needed:
No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
For safety reasons unsuitable extinguishing agents: No further information available.
5.2 Special hazards arising from the substance or mixture:
Formation of toxic gases is possible during heating or in case of fire.
5.3 Advice for firefighters:
Protective equipment:
Wear self-contained breathing apparatus and protective suit.
Do not inhale explosion gases or combustion gases.

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Safety data sheet

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:
Wear protective clothing.
Ensure adequate ventilation before entering the area.
Keep out unauthorized persons.
Wear appropriate protective devices (See Section 8 Exposure Controls/Personal Protection).
Avoid contact with eyes and skin.
Do not swallow the product.
6.2 Environmental precautions:
Do not allow to enter sewers/surface or ground water.
Do not allow product to reach sewage system or any water course.
6.3 Methods and material for containment and cleaning up: *Pick up mechanically.*
6.4 Reference to other sections:
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:
Ensure good ventilation/exhaustion at the workplace.
Extractors are required on all machines used for thermal processing or powder handling processes.
Do not handle until all safety precautions have been read and understood.
Information about fire - and explosion protection:
No special measures required.
Keep ignition sources away - Do not smoke.
7.2 Conditions for safe storage, including any incompatibilities:
Storage
Requirements to be met by storerooms and receptacles: *Store in a cool and dry location.*
Information about storage in one common storage facility:
See section 10 for information on incompatible materials.
Further information about storage conditions:
Protect from heat and direct sunlight.
Store containers in a well ventilated area.
7.3 Specific end use(s): *No further relevant information available.*

SECTION 8: Exposure controls/personal protection

Additional information about design of technical facilities: *No further data; see item 7.*

8.1 Control parameters *No further information available.*
Ingredients with limit values that require monitoring at the workplace: *Not required.*

8.2 Exposure controls
Personal protective equipment
General protective and hygienic measures:
Wash hands before breaks and at the end of work.
Do not eat or drink while working.
Do not smoke.
Respiratory protection: *Dust respirator, simplified dust respirator*
Protection of hands:

Protective gloves

Material of gloves: *Rubber*

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Safety data sheet

Eye protection:

Safety glasses

Body protection: *Protective work clothing*

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information	
Appearance	
Form:	*Pellets*
Colour:	*Whitish*
Odour:	*Odourless*
Odour threshold:	*Not determined.*
pH-value:	*No further information available.*
Melting point/Melting range:	*245-275 °C*
Boiling point/Boiling range:	*No further information available.*
Flash point:	*Not applicable.*
Flammability (solid, gaseous):	*Product is not flammable.*
Decomposition temperature:	*398 °C (0.1%TG)*
Self-igniting:	*Not determined.*
Danger of explosion:	*Product does not present an explosion hazard.*
Explosion limits:	
Lower explosive limit:	*No further information available.*
Upper explosive limit:	*No further information available.*
Vapour pressure:	*No further information available.*
Density at 25 °C:	*2,12-2,17 g/cm³*
Relative density	*Not determined.*
Vapour density	*Not applicable.*
Evaporation rate	*Not applicable.*
Solubility in / Miscibility with water:	*No further information available.*
Partition coefficient (n-octanol/water):	*No further information available.*
Viscosity:	
Dynamic:	*Not applicable.*
Kinematic:	*Not applicable.*
9.2 Other information:	*No further relevant information available.*

SECTION 10: Stability and reactivity

10.1 Reactivity *No further relevant information available.*
10.2 Chemical stability
Thermal decomposition / conditions to be avoided:
Even at the temperatures reached during the normal hot processing of fluoropolymers, fume that presents a potential health hazard may be generated.
To avoid thermal decomposition do not overheat.
10.3 Possibility of hazardous reactions: *No dangerous reactions known under normal conditions of use.*
10.4 Conditions to avoid: *Keep away from heat, sparks, flame, high temperature.*
10.5 Incompatible materials: *No further relevant information available.*

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Safety data sheet

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity
LD/LC50 values relevant for classification: *No further information available.*
Primary irritant effect
Skin corrosion/irritation *No further information available.*
Serious eye damage/irritation *No further information available.*
after inhalation: *No further information available.*
Respiratory or skin sensitisation *Based on available data, the classification criteria are not met.*
Additional toxicological information:
General effects:
Fumes generated during burning may cause "polymer fume fever" (flu-like symptons such as fever, chill, cough).
This may last for a whole day and night.
Fumes are not absorbed in skin. No sensitizing effect known.

Effects of hydrogen fluoride:
Low concentration of hydrogen fluoride may cause feeling of dyspnea, cough, irritation in eyes, nose, throat, fever, chill for 1-2 days.
After that, dyspnea, cyanosis and pulmonary edema may be seen.
High concentration of hydrogen fluoride damages liver and kidney.

Effects of carbonyl fluoride:
Skin: Irritation or eruption
Eye: Ulcer in cornea, conjunctiva
Respiratory system : Irritation
Lung: Temporary symptons such as cough, pain, dyspnea
Persons who have experienced lung diseases are vulnerable to toxicity caused by excessive exposure to pyrolysis products
CMR effects
Germ cell mutagenicity *Based on available data, the classification criteria are not met.*
Carcinogenicity *Based on available data, the classification criteria are not met.*
Reproductive toxicity *Based on available data, the classification criteria are not met.*
STOT-single exposure *Based on available data, the classification criteria are not met.*
STOT-repeated exposure *Based on available data, the classification criteria are not met.*
Aspiration hazard *Based on available data, the classification criteria are not met.*
Chronic study *No further information available.*

SECTION 12: Ecological information

12.1 Toxicity
Aquatic toxicity: *No further relevant information available.*
12.2 Persistence and degradability: *The product is thought to be non-biodegradable.*
12.3 Bioaccumulative potential: *No further relevant information available.*
12.4 Mobility in soil: *No further relevant information available.*
Ecotoxical effects: *no data*
12.5 Results of PBT and vPvB assessment
PBT: *No further relevant information available.*
vPvB: *No further relevant information available.*
12.6 Other adverse effects: *No further relevant information available.*

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation:
Landfill disposal is recommended.
In case of incineration, the temperature must be higher than 800 ℃.
Treat exhaust gas such as HF in a suitable way.

Safety data sheet

Disposal must be made according to official regulations.

Uncleaned packaging
Recommendation: *Disposal must be made according to official regulations.*

SECTION 14: Transport information

14.1 UN-Number:	
ADR, ADN, IMDG, IATA	*Not applicable*
14.2 UN proper shipping name:	
ADR, ADN, IMDG, IATA	*Not applicable*
14.3 Transport hazard class(es):	
ADR, ADN, IMDG, IATA	
Class:	*Not applicable*
14.4 Packing group:	
ADR, IMDG, IATA	*Not applicable*
14.5 Environmental hazards:	*Not applicable.*
Marine pollutant:	*No*
14.6 Special precautions for user:	*Not applicable.*
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:	*Not applicable.*
Transport/Additional information:	*Avoid direct sunlight. Make sure of no damage, corrosion, leaks on the receptacles.* *Take necessary measures for preventing cargo shift.*
UN "Model Regulation":	-

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
No further relevant information available.
Labelling according to Regulation (EC) No 1272/2008 *Not applicable*
Hazard pictograms *Not applicable*
Signal word *Not applicable*
Hazard statements *Not applicable*

National regulations *No further information available.*

SECTION 16: Other information

The product is for the industrial use only. We do not guarantee the safety in case the product is used for the other purposes. When using the product for health-care application or food/feed application, consult us in advance.
This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing SDS: *SAFETY&ENVIRONMENT DEPT.*
Contact: *http://www.daikinchem.com.cn*
Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

安全資料表(SDS)

一、化學品與廠商資料

物品名稱：SCR 2.6mm 裸銅線
其他名稱：無
建議用途及限制使用：電線電纜用/無限制使用
製造者、輸入者或供應者名稱： 大展電線電纜股份有限公司 328-45 桃園市觀音區新富路 855 號
緊急聯絡電話：TEL:+886-3-4901511　　傳真電話：+886-3-4905547

二、危害辨識資料

化學品危害分類：不需要
標示內容： 1.象徵符號：不需要 2.警 示 語：不需要 3.危害警告訊息：不需要 4.危害防範措施：不需要
其他危害：不需要

三、成分辨識資料

純物質：

元素名稱	CAS NO	成分百分比(wt%)
銅 (Cu)	7440-50-8	≧99.95
其他雜質		≦0.05

四、急救措施

不同暴露途徑之急救方法： ● 吸入：不需要 ● 皮膚接觸：不需要 ● 眼睛接觸：不需要 ● 食入：不需要
最重要症狀及危害效應：無
對急救人員之防護：不需要
對醫師之提示：不需要

五、滅火措施

適用滅火劑：化學乾粉.二氧化碳

滅火時可能遭遇之特殊危害：無
特殊滅火程序：無
消防人員之特殊防護設備：無

六、洩漏處理方法

個人應注意事項：無
環境注意事項：無
清理方法：無

七、安全處置及儲存方法：

處置： 1.參考現行法規。 2.可回收再利用。
儲存：儲存於室內並包裝。

八、暴露預防措施

工程控制：放置空氣流通的地方。				
控制參數：				
危害物質成分	八小時日時量 平均容許濃度 TWA	短時間時量 平均容許濃度 STEL	最高容許濃 CEILING	生物指標 BEIs
無	無	無	無	無
◆ 個人防護設備： 1. 呼吸防護：不需要 2. 手部防護：防護手套 3. 眼睛防護：護目鏡 4. 皮膚及身體防護：不需要				
衛生措施：不需要				

九、物理及化學性質

外觀(物質狀態、顏色)：固體	氣味：無
嗅覺閾值：—	熔點：1083 ℃
pH 值：中性	沸點／沸點範圍：2595℃
易燃性(固體、氣體)：-	閃火點：-
分解溫度：-	測試方法(開杯或閉杯)：-
自燃溫度：-	爆炸界限：-
蒸氣壓：-	蒸氣密度（空氣=1）：-
密度（水=1）：8.94	溶解度：溶於硝酸

辛醇／水分配係數（log Kow）:-	揮發速率：—

十、安定性及反應性

安定性：常溫下極安定
特殊狀況下可能之危害反應：無
應避免之狀況：無
應避免之物質：無
危害分解物：無

十一、毒性物資

暴露途徑：皮膚、吸入及眼睛。

症狀：暈眩、呼吸和心跳加速、肌肉不協調、情緒低落、疲勞、呼吸不順、噁心、嘔吐、虛脫、喪失意識、痙攣、窒息、凍傷或凍瘡(液態 LPG)。

急毒性：無
皮膚：無
吸入：無
眼睛：無
慢毒性或長期毒性：無

十二、生態資料

生態毒性：固體無毒性

持久性及降解性：銅無法被生物分解，可回收再利用

生物蓄積性 ：固體無毒性

土壤中之流動性 ：固體無毒性

其他不良效應：-

十三、廢棄處理方法

廢棄處理方法：參考相關法規處理，可回收再利用。

十四、運送資料

聯合國編號：無

聯合國運輸名稱：無

運輸危害分類：無

包裝類別：紙箱

海洋污染物（是 / 否）:否

特殊運送方法及注意事項：無

十五、法規資料

適用法規：無

安全資料表(SDS)

十六、其他資料

參考文獻	無	
製表單位	名稱：台名稱:-大展電線電纜股份有限公司　品保部	
	地址：328-45桃園市觀音區新富路855號 電話：+886-3-4901511	
製 表 人	職稱：品保課長	姓名(簽章)：周碧蓮
製表日期	2022 年 01 月 03 日	

註: 上述資料中符號”—”代表目前查無相關資料,而符號”/”代表此欄位對該物質並不適用.

昇貿科技 SHENMAO Technology Inc.

安全資料表

一、化學品與廠商資料

化學品名稱：純錫	
其他名稱：—	
物品編號： Sn99.90、Sn99.99、99.99%(-T)	
建議用途及限制使用：—	
製造者、輸入者或供應者名稱：昇貿科技股份有限公司	
地址：桃園市觀音區工業二路 12-1 號	電話：(886)3-416-0177
緊急聯絡電話：(886)3-416-0177	傳真電話：(886)3-416-0133
公司網址：http://www.shenmao.com	

二、危害辨識資料

化學品危害分類：特定標的器官系統毒性物質－重複暴露 第 2 級
標示內容：  象徵符號：健康危害 警示語：警告 危害警告訊息：長期或重複暴露可能對器官造成傷害 危害防範措施：如遇意外或覺得不適，立即洽詢醫療。
其他危害：—

三、成分辨識資料

危害成分之中英文名稱：	化學文摘社登記號碼(CAS No.)	濃度或濃度範圍(成分百分比)
錫(Tin)	7440-31-5	100

四、急救措施

不同暴露途徑之急救方法：	
吸入	1.立即將患者移至新鮮空氣處。 2.若呼吸停止，施予人工呼吸。 3.保持患者溫暖及休息。 4.立即就醫。
皮膚接觸	1.立即用肥皂或中性清潔劑及水清洗皮膚。 2.若滲透衣服，立即脫掉衣服，並用肥皂或中性清潔劑及水清洗皮膚。 3.若仍有刺激感，立即就醫。
眼睛接觸	1.立即以大量清水清洗眼睛，並不時地撐開上下眼皮。 2.如仍有刺激感，立即就醫。
食　　入	1.若患者意識清醒，立即喝下大量的水。 2.用手指插入喉嚨催吐。 3.若患者意識不清，勿催吐。 4.立即就醫。

最重要症狀及危害效應：刺激感
對急救人員之防護：應穿著 C 級防護裝備在安全區實施急救。
對醫師之提示：患者吞食時，考慮洗胃。

五、滅火措施

適用滅火劑：水霧。
滅火時可能遭遇之特殊危害：此物不燃
特殊滅火程序： 1.在安全情況下將容器搬離火場。 2.以水霧冷卻暴露火場的貯槽或容器。
消防人員之特殊防護設備：—

六、洩漏處理方法

個人應注意事項：在洩漏區及外洩區尚未清除乾淨前沒有穿戴防護裝備及衣物者禁止進入。
環境注意事項：對洩漏區通風換氣。
清理方法： 1.以最方便和安全方式回收洩漏物質或以合格衛生掩埋法處理。 2.液體可用蛭石、乾沙、土或類似物質吸收。

七、安全處置與儲存方法

處置：作業時避免產生粉塵。
儲存： 置於陰涼、乾燥、通風良好區。

八、暴露預防措施

工程控制：
1.局部排氣裝置。
2.整體換氣裝置。

控制參數：

危害物成分	八小時日時量平均容許濃度 TWA	短時間時量平均容許濃度 STEL	最高容許濃度 CEILING	生物指標 BEIs
錫(Tin)	2 mg/m^3	—	—	—

個人防護設備：—

呼吸防護：10 mg/m^3 以下：防塵及霧滴之呼吸防護具。

20 mg/m^3：1.防塵及霧滴之呼吸防護具。2.供氣式呼吸防護具。

50 mg/m^3：1.防塵及霧滴之動力式空氣濾清式呼吸防護具。2.連續流動式供氣式 呼吸防護具。

100 mg/m^3：含高效率濾材的動力型空氣淨化式、全面型自攜式或供氣式呼吸防護具。

未知濃度：正壓自攜式呼吸防護具、正壓全面型供氣式呼吸防護具輔以正壓自攜式呼吸防護具。

逃生：高效率濾材之全面型呼吸防護具、逃生型自攜式呼吸防護具。 手部防護：橡膠或塑膠的手套。 眼睛防護：1.防濺之安全護目鏡。2.全面罩。3.不要戴隱形眼鏡。 皮膚及身體防護：圍裙、長袖衣物。
衛生措施： 1.工作後儘速脫掉污染之衣物，洗淨後才可再穿戴或丟棄，且須告知洗衣人員污染物之危害性。 2.工作場所嚴禁吸煙或飲食。 3.處理此物後，須徹底洗手。 4.維持作業場所清潔。

九、物理及化學性質

外觀（物質狀態、顏色等）：銀灰色金屬	氣味：—
嗅覺閾值：—	熔點：232 ℃
pH 值：—	沸點/沸點範圍：—
易燃性（固體、氣體）：—	閃火點：—
分解溫度：—	測試方法（開杯或閉杯）：—
自燃溫度：—	爆炸界限：—
蒸氣壓：—	蒸氣密度：—
密度：7.3g/cm^3	溶解度：—
辛醇／水分配係數（log Kow）：—	揮發速率：—

十、安定性及反應性

安定性：正常狀況下安定，粉末狀態於空氣中會氧化。
特殊狀況下可能之危害反應： 1.金屬錫與松節油接觸會產生火災和爆炸。 2.塑膠、橡膠和塗膜。 3.酸、鹼、氧化物、硫、鹵素。 4.粉末狀的錫與過氧化鈉混合時，遇到濕氣會起火；與二氧化碳或硝酸銨薰煙（超過 200℃時）會起爆炸性反應。 5.四氯化碳（濕氣存在下）、鹵化物、硝酸銅溶液、二氧化鉀。
應避免之狀況：粉末狀態於空氣中會氧化。
應避免之物質： 1.金屬錫與松節油接觸。 2.塑膠、橡膠和塗膜。 3.酸、鹼、氧化物、硫、鹵素。 4.粉末狀的錫與過氧化鈉，二氧化碳或硝酸銨薰煙（超過 200℃時）。 5.四氯化碳（濕氣存在下）、鹵化物、硝酸銅溶液、二氧化鉀。
危害分解物：—

十一、 毒性資料

暴露途徑：—
症狀：—
急毒性： 1.可能造成眼睛、鼻子、喉、皮膚的刺激。 2.吞食一般而言無毒，但大量會因刺激而造成腸胃不適。
慢毒性或長期毒性： 1.有下列病況者，易受危害：皮膚病、慢性呼吸疾病。 2.動物實驗中，會增加肉腫的機率。

十二、 生態資料

生態毒性：—
持久性及降解性：—
生物蓄積性：—
土壤中之流動性：—
其他不良效應：—

十三、 廢棄處置方法

廢棄處置方法：可回收再利用或依廢棄物處理法處理。

十四、 運送資料

聯合國編號：不適用
聯合國運輸名稱：不適用
運輸危害分類：遵循運輸協會(IATA)
包裝類別：不適用
海洋污染物（是／否）：否
特殊運送方法及注意事項：不適用

十五、 法規資料

適用法規： 1.職業安全衛生法 2.勞工作業場所容許暴露標準 3.事業廢棄物貯存清除處理方法及設施標準 4.危害性化學品標示及通識規則

十六、 其他資料

參考文獻	勞動部職業安全衛生署 GHS 查詢系統	
製表單位	名稱：昇貿科技(股)公司	
	地址：桃園市觀音區工業二路 12-1 號	電話：(886)3-416-0177
製表人	職稱：環安	姓名(簽章)：黃國能
製表日期	2020/7/10	

備註	上述資料中符號"—"代表目前查無相關資料

本表僅供參考，運作人需自行必要的處理。

UL Product iQ®

AVLV2.E77981 - Appliance Wiring Material - Component

Appliance Wiring Material - Component

WONDERFUL HI-TECH CO LTD
2F 72 WU KONG 6TH RD
WUGU DISTRICT
NEW TAIPEI INDUSTRIAL PARK
NEW TAIPEI, 248 Taiwan

E77981

Table of Recognized Styles

Single-conductor, thermoplastic insulation							
1007	1027	1227	1340	1431	1640	1868	10444
1009	1028	1230	1342	1436	1641	1953	10484
1010	1029	1275	1344	1452	1650	1971	10515
1011	1030	1283	1345	1478	1651	1973	10535
1012	1031	1316	1346	1489	1663	1976	10602
1013	1032	1317	1347	1497	1672	1979	10627
1014	1033	1318	1354	1500	1674	10002	10704
1015	1061	1319	1365	1503	1691	10005	10738
1016	1071	1320	1375	1509	1692	10064	10741
1017	1095	1321	1381	1533	1726	10070	10800
1018	1107	1330	1408	1550	1727	10131	10801
1019	1113	1331	1409	1569	1741	10231	10921
1020	1118	1332	1410	1571	1743	10254	10936
1021	1120	1333	1411	1581	1745	10269	10937
1022	1150	1335	1412	1589	1777	10272	10985
1023	1185	1336	1413	1605	1790	10362	11014
1024	1195	1337	1414	1617	1792	10368	11030
1025	1208	1338	1429	1618	1803	10369	11352
1026	1226	1339	1430	1631	1867	10439	11733
Multiple-conductor, thermoplastic insulation							

2084	2345	2498	2586	2777	2960	20236	21088

2092	2346	2501	2589	2789	2961	20245	21099
2093	2384	2502	2591	2791	2969	20246	21143
2094	2385	2511	2592	2824	2970	20247	21153
2095	2386	2516	2598	2833	2990	20251	21286
2096	2387	2517	2614	2835	2991	20276	21307
2097	2388	2528	2623	2844	2992	20279	21327
2098	2396	2532	2626	2851	2993	20280	21355
2099	2404	2547	2630	2854	2994	20288	21398
2100	2405	2549	2631	2876	20002	20306	21439
2101	2444	2550	2637	2877	20006	20379	21451
2102	2448	2552	2648	2881	20035	20417	21468
2103	2462	2562	2651	2896	20058	20489	21503
2106	2463	2569	2661	2919	20063	20544	21520
2127	2464	2570	2668	2933	20121	20549	
2128	2468	2571	2674	2934	20127	20554	
2265	2474	2574	2678	2935	20187	20620	
2273	2483	2576	2704	2936	20197	20792	
2331	2490	2582	2717	2937	20207	21016	
2343	2493	2583	2725	2938	20233	21064	
2344	2497	2584	2733	2951	20234	21080	
Single-conductor, thermoset insulation							
3034	3168	3265	3286	3348	3385	3439	30035
3039	3173	3266	3302	3376	3386	3443	
3044	3199	3271	3321	3377	3424	3619	
Multiple-conductor, thermoset insulation							
4028	4032	4036	4384	4469	4478		

Style(s) 1007, 1015, 10269, 1028, 10741, 10937, 1346, 1569, 2103, 3265, 3385 can be assigned the IEC 60332-1 flammability rating

Style(s) 1007, 1015, 10269, 1028, 10741, 10937, 1346, 1569, 2103, 3265, 3385 can be assigned the IEC 60332-2 flammability rating

Marking: Company name, voltage rating, temperature rating, conductor size, conductor material if other than copper,.

Last Updated on 2022-05-09

APPLIANCE WIRING MATERIAL

Subj.758 Section 1 Page 1979 Issued:1986-02-26

Revised:2012-07-26

Style 1979 Single conductor with extruded insulation and non-integral jacket.

Rating	105 deg C, 30 Vac, Horizontal flame.
Conductor	40-20 AWG. Material not specified.
Insulation	Extruded ETFE or extruded FEP or extruded PFA, 1.8 mils min average, 1.5 mils minimum at any point.
Shield	Optional.
Jacket	Extruded ETFE or extruded FEP or extruded PFA, 1.8 mils minimum average, 1.5 mils minimum at any point.
Standard	Appliance Wiring Material UL 758.
Marking	General.
Use	Internal Wiring of Class 2 Circuits in Electronic Equipment.

無鉛錫絲

型號：PF606-R

Rev.2018/12/24 Ver.14-00

─規格─

項目	規格	規範標準
外觀	表面光亮，無汙染物	
合金成份	錫/銀3.0/銅0.5/X	JIS-Z-3282
液相溫度	約217~219°C	使用DSC儀器
助焊劑含量	3.0 ± 1.0%	JIS-Z-3283
鹵素含量	<0.5%	JIS-Z-3197
比重	約7.4	
擴散率	>75%	JIS-Z-3197
包裝	0.5、1、5、10 公斤/捲。	JIS-Z-3283
線徑	0.3~0.7 ± 0.05mm,0.8~3.0 ± 0.1mm	

─信賴性測試─

測試項目	測試結果	測試方法
銅鏡試驗	Pass	IPC-TM-650, 2.3.32
銅板腐蝕試驗	Pass	IPC-TM-650, 2.6.15
表面絕緣阻抗	Pass	IPC-TM-650, 2.6.3.3
電子化學遷移測試	Pass	IPC-TM-650, 2.6.14.1

─合金組成─

錫 Sn	銀 Ag	銅 Cu	鎳 Ni	鍺 Ge	鉛 Pb	銻 Sb	鉍 Bi	鎘 Cd	金 Au	銦 In	鋁 Al	砷 As	鐵 Fe	鋅 Zn
REM.	2.8~3.2	0.3~0.7	0~0.01	0~0.01	0.05 Max	0.05 Max	0.10 Max	0.002 Max	0.05 Max	0.10 Max	0.001 Max	0.03 Max	0.02 Max	0.001 Max

專利號碼：日本第3296289號，美國第6179935B1號，德國第19816671C2號。 (wt.%)

本產品成份均完全符合歐盟RoHS與SONY綠色夥伴中特定有害物質管制之要求。

─特性與保存方法─

1、特性

屬於免洗型錫絲，銲接性能佳，銲後殘渣透明，無腐蝕性。銲接時，無不良氣味，且無毒性氣體產生，不對人體造成傷害。適合應用在免洗製程。

2、保存方法

(1)必須放置在乾燥且無腐蝕性與無陽光照射之環境
(2)使用期限2年。

本公司聯絡資料

昇貿科技股份有限公司

地址：桃園市觀音區觀音工業區工業二路12-1號

電話：(886)3-416-0177　傳真：(886)3-416-0133

電子信箱：sales@shenmao.com

分公司

請參考本公司網站

網址：http://www.shenmao.com

昇貿科技 SHENMAO Technology Inc.

安全資料表

一、化學品與廠商資料

化學品名稱：無鉛錫絲
其他名稱：無鉛錫絲(Sn-Ag-Cu)
編號： PF529-R、PF565-R、PF603-R、PF604-R、PF606-R、PF608-R、PF609-R、PF610-R、PF614-R、PF615-R、PF619-R、PF620-R、PF627-R、PF629-R、PF632-R、PF634-R、PF636-R、PF637-R、PF638-R、PF639-R、PF640-R、PF643-R、PF645-R、PF647-R、PF665-R、PF711-R、PF801-R、PF606-F3、PF629-F3、PF529-F4、PF604-F4、PF606-F4、PF610-F4、PF620-F4、PF629-F4、PF632-F4、PF643-F4、PF665-F4、PF674-F4、PF678-F4、PF679-F4、PF708-F4、PF565-F5、PF604-F5、PF606-F5、PF610-F5、PF629-F5、PF643-F5、PF604-F6、PF606-F6、PF629-F6、PF636-F6、PF643-F6、PF565-F7、PF604-F7、PF606-F7、PF610-F7、PF620-F7、PF629-F7、PF632-F7、PF643-F7、PF679-F7、PF627-F8、PF628-F8、PF606-F10、PF629-F10、PF529-F11、PF604-F11、PF606-F11、PF610-F11、PF611-F11、PF629-F11、PF643-F11、PF651-F11、PF679-F11、PF604-JF2、PF604-JF3、PF604-F13、PF606-F13、PF609-F13、PF610-F13、PF620-F13、PF629-F13、PF643-F13、PF643-F101、PF674-F13、PF678-F13、PF679-F13、PF708-F13、PF604-F100、PF606-F100、PF629-F100、PF643-F100、PF678-F100、PF643-F4R、PF803-F7
建議用途及限制使用：—
製造者、輸入者或供應者名稱、地址及電話：昇貿科技股份有限公司、 328451 桃園市觀音區大潭北路 665 號、886-3-4160177
緊急電話/傳真：886-3-4160177/886-3-4160133

二、危害辨識資料

化學品危害分類：急毒性物質(吸入)第 4 級、水環境之危害物質(急毒性)第 3 級、特定標的器官系統毒性物質－重複暴露第 2 級、
標示內容：  象徵符號：驚嘆號、健康危害 警示語：警告 危害警告訊息：吸入有害 對水生生物有害 長期或重複暴露可能對器官造成傷害 危害防範措施：勿吸入粉塵、氣體，避免與皮膚接觸。 如遇意外或覺得不適，立即洽詢醫療。
其他危害：

三、成分辨識資料

■混合物：

化學性質：

危害成分之中英文名稱	化學文摘社登記號碼(CAS No.)	濃度或濃度範圍(成分百分比)
錫 (Tin)	7440-31-5	90.0~99.0
銀 (Silver)	7440-22-4	0.0~5.0
銅 (Copper)	7440-50-8	0.0~4.0
鎳 Nickel(Ni)	7440-02-0	0.0-0.5
鍺 Germanium(Ge)	7440-56-4	0.0-2.0
松香 (Rosin)	8050-09-7	1.0~5.0

四、急救措施

不同暴露途徑之急救方法：	
吸　　入	將患者移至清新空氣處，如果患者已停止呼吸，則施以人工呼吸並送急診。
皮膚接觸	以大量的清水沖洗，如可能時使用肥皂。如果刺激感仍存在，則尋求醫療看護。
眼睛接觸	以大量的清水沖洗，15 分鐘或者直到刺激感消失。如果，刺激感仍存在，則尋求醫療看護。
食　　入	立刻就近送診。
最重要症狀及危害效應：刺激感。	
對急救人員之防護：應穿著 C 級防護裝備在安全區實施急救。	
對醫師之提示：—	

五、滅火措施

適用滅火劑：泡沫、乾粉及二氧化碳滅火劑。
滅火時可能遭遇之特殊危害：—
特殊滅火程序：—
消防人員之特殊防護設備：氧氣筒及防護衣。

六、洩漏處理方法

個人應注意事項：在洩漏區及外洩區尚未清除乾淨前沒有穿戴防護裝備及衣物者禁止進入。
環境注意事項：對洩漏區通風換氣。
清理方法： 1. 以最方便和安全方式回收洩漏物質或以合格衛生掩埋法處理。 2. 液體可用蛭石、乾沙、土或類似物質吸收。

七、安全處置與儲存方法

處置：作業時避免產生粉塵。
儲存： 放置在乾燥且無腐蝕性與無陽光照射之環境

八、暴露預防措施

工程控制：1.局部排氣裝置。2.整體換氣裝置。

控制參數：

危害物成分	八小時日時量平均容許濃度 TWA mg/m³	短時間時量平均容許濃度 STEL	最高容許濃度 CEILING	生物指標 BEIs
錫	2.0	—	—	—
銀	0.01	—	—	—
銅,燻煙	0.2	—	—	—

個人防護設備：

呼吸防護：10 mg/m³ 以下：防塵及霧滴之呼吸防護具。

20 mg/m³：1.防塵及霧滴之呼吸防護具。2.供氣式呼吸防護具。

50 mg/m³：1.防塵及霧滴之動力式空氣濾清式呼吸防護具。2.連續流動式供氣式呼吸防護具。

100 mg/m³：含高效率濾材的動力型空氣淨化式、全面型自攜式或供氣式呼吸防護具。

未知濃度：正壓自攜式呼吸防護具、正壓全面型供氣式呼吸防護具輔以正壓自攜式呼吸防護具。

逃生：高效率濾材之全面型呼吸防護具、逃生型自攜式呼吸防護具。

手部防護：橡膠或塑膠的手套。

眼睛防護：1.防濺之安全護目鏡。2.全面罩。3.不要戴隱形眼鏡。

皮膚及身體防護：圍裙、長袖衣物。

衛生措施：工作場所禁止抽煙、飲食。

九、物理及化學性質

外觀（物質狀態、顏色等）：銀灰色固體	氣味：—
嗅覺閾值：—	熔點：217-309℃
pH 值：—	沸點/沸點範圍：—
易燃性（固體、氣體）：—	閃火點：—
分解溫度：—	測試方法(開杯或閉杯)：—
自燃溫度：—	爆炸界限：—
蒸氣壓：—	蒸氣密度：—
密度：7.3-7.4 g/cm³	溶解度：不溶於水
辛醇／水分配係數（log Kow）：—	揮發速率：—
比重(25℃)：—	酸價(mgKOH/g)：—
固形份含量(%)：—	

十、安定性及反應性

安定性：安定
特殊狀況下可能之危害反應：無。
應避免之狀況：避免產生粉塵。
應避免之物質：具氧化後之物質、酸，過氧化氫。
危害分解物：無。

十一、 毒性資料

暴露途徑：吸入、經皮膚
症狀：吸入或皮膚接觸可能引起過敏
急毒性：可能造成鼻子、皮膚的刺激。
慢毒性或長期毒性：—

十二、 生態資料

生態毒性：—
持久性及降解性：—
生物蓄積性：—
土壤中之流動性：—
其他不良效應：—

十三、 廢棄處置方法

廢棄處置方法： 可回收再利用或依廢棄物處理法處理。

十四、 運送資料

聯合國編號：不適用
聯合國運輸名稱：不適用
運輸危害分類：不受國際航空運輸協會與國際海運危險品準則的限制。 國際海事組織/國際民航組織/國際航空運輸協會－危險品：不被視為危險品。
包裝類別：不適用
海洋污染物（是／否）：否
特殊運送方法及注意事項：放置在乾燥且無腐蝕性與無陽光照射之環境

十五、 法規資料

適用法規： 1.職業安全衛生法 2.勞工作業場所容許暴露標準 3.事業廢棄物貯存清除處理方法及設施標準 4.危害性化學品標示及通識規則

十六、 其他資料

參考文獻	勞動部職業安全衛生署 GHS 查詢系統

安全資料表

製表單位	名稱：昇貿科技股份有限公司	
	地址/電話：328451 桃園市觀音區大潭北路 665 號/03-4160177	
製表人	職稱：環安	姓名(簽章)：黃國能
製表日期	2023/2/3	
備註	上述資料中符號"—"代表目前查無相關資料	

本表僅供參考，運作人需自行必要的處理。

有嘉有限公司

EVA:(Ethylene -Vinyl –Acetate) (乙烯醋酸乙烯酯)成分表 :

EVA：30%　　PE：35%　　架橋劑：3%

CaCo3：25%　　發泡劑：7%

本公司所生產之 EVA 不含偶氮染料(AZODYES)

EVA 物性表：

EVA：30 ~35 度

密度：0.588g/cm³

延伸率：280%

抗拉強度：5kg/cm³

吸水率：0.005 以下 g/cm³

壓縮變形率：4.5%以下

特性：

耐溫：65 度開始軟化，90 度將開始熔縮

特性功用：

1. 耐甲苯，酸鹼，易裁加工，彈性佳

2. 常用於運動器材，護具(緩衝材料)，膠帶，電子墊片

3. 車燈迫緊

壓縮變形 2%(3kg 壓 1H，恢復 60%)如加膠，性越好

Material Safety Data Sheet

1、Identification of the material and company

Material identity: Trade name： TAISOX 7130F、7140F、7310M、7320M、7240M、7340M、7350M(F)、 7360M、7470M、7470K、7760H、7870H、7A50H、7B50H、7A60H、7B60H
Material NO:TC-1057
Producer/Supplier: Formosa Plastics Corporation Formosa Industrial Park No.1, Mailiao, Yunlin county, Taiwan
Emergency Phone / Fax：886-5-6811180/886-5-6811122

2、Hazard indication:

3.1 Referring to EEC directive 88/379, the material is classified **NOT DANGEROUS**.

3.2 Main personal hazards: -fire, see §5
-Slipping in case of spillage/leakage, see §6
-Inhalation of vapours,fumes,powders, see §7
-Hazard of contact with molten polymer, see §4

3.3 Powders have specific fire risks

3.4 Environment: Lack of biodegradability, see§12

3、Composition / Information on Ingredients

Technical name：EVA copolymer
Chemical name：Ethylene vinyl acetate copolymer
Ingredient percent(%): EVA≥99.9%，Other≤0.1%
Chemical Abstracts Number (CAS No.) ：24937-78-8
Symbol of the basic polymer against standard ISO 1043-1：E/VAC
Dangerous components: NONE

4、First Aid Measures :

Skin :If molten polymer gets on skin, cool rapidly with cool water.
Burns have to be treated clinically.

EYES: Wash abundantly with water.

5、Fire Fighting Measure :

Suitable Extinguishing Media: Water, Water fog, CO2, Foam or dry extinguishers
Exting. Media to be avoided: NONE
Combustion products: Carbon dioxide, water. In case of incomplete combustion: carbon monoxide, hydrocarbons, aldehydes, ketones and acetic acid may be developed.

6、Spillage

In case of spillage/leakage scoop to container to avoid danger of skidding.

7、Handling and Storage

7.1 During the processing of the material, avoid inhalation of fumes, or powders, by providing good ventilation of the workroom and, if necessary, they have to be trapped by intake in an effective manner. If these measure are taken, traces of aldeydes or ketones which may arise during the process, will remain under the TLV/TWA value. Avoid dispersion of dust in air to reduce potential for ignition or explosions.
7.2 Storage: Out of direct sun, in well ventilated, cool and dry places
7.3 fire precautions: Equipment must be earthed, to avoid static electric charges. Any contact with flame or hot surface must be avoided.

8、Personal Protection

Use gloves, goggles or eyeshade and normal working equipment. In case of powder, avoid inhalation.

9、Physical and Chemical Properties / Characteristics

Appearance: Solid	Form：Pellet
Colour : Translucent	Odor: Slight ester odor.
pH value： -	Boiling Point / Boiling Range: ℃
Decomposition Temperature：-	Flash Point： 500 ℉ 260 ℃ Test Method： ☐ Open Cup ■Close Cup
Autoignition Temperature：ca.300℃	Exposure Limits： - %
Vapor Pressure：- (Below) mmHg@20℃	Vapor Density： -
Specific Gravity：0.920-0.960 g/cm^3	Solubility in Water： negligible
Meltingpoint/ Freezing point: -	Volatility: -
n-octanol partition coefficient (lgKow): -	

10、Stability and Reactivity

Stable and chemically inert at room temperature. Protracted exposure to temperature over 200℃ may cause resin degradation.

11、Toxicological Information

Exposures limits for vinyl acetate: TLV-TWA 10ppm(35mg/m^3),STEL 15 ppm(35mg/m^3);TWA for dust:5 mg/m^3

Avoid exposure to fumes, eventually developed during the process, by intake and/or efficient ventilation of the working rooms.

12、Ecological Information

The product is not biodegradable. It can be recycled using suitable technologies. It does not contain, as additives, compounds of lead, mercury, cadmium and chromium. It does not contain asbestos, CFC, HCFC; halons .It is not a water endangering material. It is very slowly degraded by solar UV irradiation.

13、Disposal Information

Disposal must be done in accordance with existing regulations. Landfilling and incineration can be considered in most cases suitable. Recycling is possible by melting and pelletizing.

14、Transport Information

The United Nations Number(UN-No) Not regulated
The United Nations Shipping Name Not regulated
D.O.T. Hazard Class Not regulated
Package Category Not regulated
Maritime Pollutants Not regulated
Special Transport Way And Note Not regulated

15、Regulation Information

None

16、Other Information

The information provided is given in good faith and is based on our actual knowledge.
This is not a technical sheet for use of the product.
This sheet does not exempt the user from knowing and applying all the relevant regulations and from taking all the relevant safety precautions.

Revision 2014-02-26

RoHS REPORT INDEX

	NAME	供應商	RoHS report
1	PCB		
1-1	FR4	南亞塑膠工業股份有限公司	ETR23703796
1-2	銅箔	南亞塑膠工業股份有限公司	ETR23505135
1-3	白色油墨(文字)	川裕工業股份有限公司	ETR23A00862M01
1-4	黑色油墨(防焊)	聯致科技股份有限公司	ETR23800275M05
2	TAPE	3M CHINA LIMITED .	SHAEC2216712501
3	IPEX		
3-1	HOUSING	I-PEX INC.	ETR23801103
3-2	CONTACT	JX NIPPON MINING & METALS CORPORATION	ETR23803657M01
3-3	GROUND CONTACT	JX NIPPON MINING & METALS CORPORATION	ETR23803656M01
4	Cable		
4-1	色母	WONDERFUL HI-TECH CO., LTD.	TWNC01143290
4-2	FEP	大金氟化工(中國)有限公司	SHAEC22004639302
4-3	裸銅線/鍍銀/鍍錫	WONDERFUL HI-TECH CO., LTD.	TWNC01231370
5	錫絲	昇貿科技股份有限公司	ETR24205315
6	EVA	義成科技有限公司	HKC23800038

測試報告
Test Report

號碼(No.): ETR23703796 日期(Date): 24-Jul-2023

南亞塑膠工業股份有限公司 (NAN YA PLASTICS CORPORATION)
南亞電子材料(昆山)有限公司 (NANYA ELECTRONIC MATERIALS (KUNSHAN) CORP. LTD.)
南亞電子材料(惠州)有限公司 (NAN YA ELECTRONIC MATERIALS (HUIZHOU) CORP., LTD)
台北市松山區敦化北路201號 (NO. 201 TUNG HWA NORTH ROAD, SONGSHAN DIST., TAIPEI, TAIWAN, R.O.C.)
江蘇省昆山市昆山經濟技術開發區長江南路201號 (201 CHANG JIANG ROAD(S) KUNSHAN ECONOMIC & TECHNICAL DEVELOPMENT ZONE, KUNSHAN, JIANG SU, CHINA 215300)
廣東省惠州市博羅縣石灣鎮永石大道230號 (NO. 230, YONGSHI BOULEVARD SHIWAN TOWN BOLUO COUNTY HUIZHOU CITY GUANG DONG)

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 the applicant as)：

送樣廠商(Sample Submitted By)	:	南亞塑膠工業股份有限公司 (NAN YA PLASTICS CORPORATION)
樣品名稱(Sample Name)	:	LAMINATE (UL E98983)
樣品型號(Style/Item No.)	:	NP-140R/NP-140TL
訂單編號(Order No.)	:	3608239

==========

收件日(Sample Receiving Date)	:	17-Jul-2023
測試期間(Testing Period)	:	17-Jul-2023 to 24-Jul-2023

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) 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.)

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

CHECK REPORT
PIN CODE: D3FC4046

測試報告
Test Report

南亞塑膠工業股份有限公司 (NAN YA PLASTICS CORPORATION)
南亞電子材料(昆山)有限公司 (NANYA ELECTRONIC MATERIALS (KUNSHAN) CORP. LTD.)
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測試部位敘述 (Test Part Description)

No.1 : 銅色/棕色板子 (COPPER COLORED/BROWN SHEET)

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
鎘 (Cd) (Cadmium (Cd))	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))		mg/kg	2	5.42	1000
汞 (Hg) (Mercury (Hg))	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
六價鉻 Cr(VI) (Hexavalent Chromium Cr(VI))	參考IEC 62321-7-2: 2017，以紫外光-可見光分光光度計分析。(With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.)	mg/kg	8	n.d.	1000
鈹 (Be) (Beryllium (Be)) (CAS No.: 7440-41-7)	參考US EPA 3052: 1996，以感應耦合電漿發射光譜儀分析。(With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	-
氧化鈹 (BeO) (Beryllium oxide (BeO)) (CAS No.: 1304-56-9)	由鈹結果計算得之。(Calculated from the result of Beryllium.)	mg/kg	2▲	n.d.	-
聚氯乙烯 (Polyvinylchloride) (PVC)	參考ASTM E1252: 2021，以傅立葉轉換紅外線光譜儀及焰色法分析。(With reference to ASTM E1252: 2021, analysis was performed by FT-IR and Flame Test.)	**	-	Negative	-

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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)
一溴聯苯 (Monobromobiphenyl)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	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)		mg/kg	5	n.d.	-
多溴聯苯總和 (Sum of PBBs)		mg/kg	-	n.d.	1000
一溴聯苯醚 (Monobromodiphenyl ether)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	mg/kg	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	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
多氯聯苯 (PCBs) (Polychlorinated biphenyls (PCBs))	參考US EPA 3550C: 2007，以氣相層析儀/質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.)	mg/kg	0.5	n.d.	-
多氯奈 (PCNs) (Polychlorinated naphthalene (PCNs))		mg/kg	5	n.d.	-

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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)
多氯三聯苯 (PCTs) (Polychlorinated terphenyls (PCTs))	參考US EPA 3550C: 2007，以氣相層析儀/質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.)	mg/kg	0.5	n.d.	-
短鏈氯化石蠟(C10-C13) (SCCP) (Short Chain Chlorinated Paraffins(C10-C13) (SCCP)) (CAS No.: 85535-84-8)	參考ISO 18219-1: 2021，以氣相層析儀/質譜儀分析。(With reference to ISO 18219-1: 2021, analysis was performed by GC/MS.)	mg/kg	50	n.d.	-
石綿 (Asbestos)					
白石綿/溫石綿 (Chrysotile) (CAS No.: 12001-29-5)	參考EPA 600/R-93/116: 1993，以立體顯微鏡(SM)與分散染色式偏光顯微鏡(DS-PLM)及X光繞射光譜分析法(XRD)分析。(With reference to EPA 600/R-93/116: 1993, analysis was performed by Stereo Microscope (SM), Dispersion Staining Polarized Light Microscope (DS-PLM) and X-ray Diffraction Spectrometer (XRD).)	-	-	Negative	-
褐石綿/鐵石綿 (Amosite) (CAS No.: 12172-73-5)		-	-	Negative	-
青石綿 (Crocidolite) (CAS No.: 12001-28-4)		-	-	Negative	-
斜方角閃石綿 (Anthophyllite) (CAS No.: 77536-67-5)		-	-	Negative	-
透閃石綿 (Tremolite) (CAS No.: 77536-68-6)		-	-	Negative	-
陽起石綿 (Actinolite) (CAS No.: 77536-66-4)		-	-	Negative	-
三丁基錫 (TBT) (Tributyl tin (TBT))	參考ISO 17353: 2004，以氣相層析儀/火焰光度偵測器分析。(With reference to ISO 17353: 2004, analysis was performed by GC/FPD.)	mg/kg	0.03	n.d.	-
三苯基錫 (TPT) (Triphenyl tin (TPT))		mg/kg	0.03	n.d.	-
二丁基錫 (DBT) (Dibutyl tin (DBT))		mg/kg	0.03	n.d.	-
二辛基錫 (DOT) (Dioctyl tin (DOT))		mg/kg	0.03	n.d.	-
三丙基錫 (TPrT) (Tripropyl tin (TPrT))		mg/kg	0.03	n.d.	-
氧化雙三丁基錫 (TBTO) (Bis(tributyltin) oxide (TBTO)) (CAS No.: 56-35-9)	由三丁基錫結果計算得之。(Calculated from the result of Tributyl Tin (TBT).)	mg/kg	0.03▲	n.d.	-

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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)
				No.1	
2-(2'-羥基-3',5'-二-叔-戊基苯基)苯並三唑 (紫外線吸收劑328) (2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)) (CAS No.: 25973-55-1)	參考US EPA 3550C: 2007，以氣相層析儀/質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-
2-[2-羥基-3',5'-二-叔-丁基苯基]-苯並三唑 (紫外線吸收劑320) (2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)) (CAS No.: 3846-71-7)	參考US EPA 3550C: 2007，以氣相層析儀/質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-
富馬酸二甲酯 (DMFu) (Dimethyl fumarate (DMFu)) (CAS No.: 624-49-7)	參考US EPA 3550C: 2007，以氣相層析儀/質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
磷酸三(2-氯乙基)酯 (TCEP) (Tris(2-chloroethyl) phosphate (TCEP)) (CAS No.: 115-96-8)	參考US EPA 3550C: 2007，以氣相層析儀/質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-
磷酸三(1-氯-2-丙基)酯 (TCPP) (Tris(1-chloro-2-propyl) phosphate (TCPP)) (CAS No.: 13674-84-5)	參考US EPA 3550C: 2007，以氣相層析儀/質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-
磷酸三(1,3-二氯異丙基)酯 (Tris(1,3-dichloro-2-propyl) phosphate) (CAS No.: 13674-87-8)	參考US EPA 3550C: 2007，以氣相層析儀/質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-

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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)
六溴環十二烷及所有主要被辨別出的異構物(HBCDD) (α- HBCDD, β- HBCDD, γ- HBCDD) (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))	參考IEC 62321-9: 2021，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-9: 2021, analysis was performed by GC/MS.)	mg/kg	20	n.d.	-
氫氟碳化合物 (Hydrofluorocarbon) (HFCs)					
HFC-23 (CHF3) (CAS No.: 75-46-7)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
HFC-32 (CH2F2) (CAS No.: 75-10-5)		mg/kg	1	n.d.	-
HFC-41 (CH3F) (CAS No.: 593-53-3)		mg/kg	1	n.d.	-
HFC-43-10mee (C5H2F10)		mg/kg	1	n.d.	-
HFC-125 (C2HF5)		mg/kg	1	n.d.	-
HFC-134 (C2H2F4)		mg/kg	1	n.d.	-
HFC-134a (CH2FCF3) (CAS No.: 811-97-2)		mg/kg	1	n.d.	-
HFC-143 (CH3F3)		mg/kg	1	n.d.	-
HFC-143a (CH3F3)		mg/kg	1	n.d.	-
HFC-152a (C2H4F2) (CAS No.: 75-37-6)		mg/kg	1	n.d.	-
HFC-227ea (C3HF7) (CAS No.: 431-89-0)		mg/kg	1	n.d.	-
HFC-236fa (C3H2F6)		mg/kg	1	n.d.	-

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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)
HFC-236ea (C3H2F6) (CAS No.: 431-63-0)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
HFC-245ca (C3H3F5)		mg/kg	1	n.d.	-
HFC-245fa (C3H3F5)		mg/kg	1	n.d.	-
HFC-365mfc (C4H5F5)		mg/kg	1	n.d.	-
全氟化碳 (Perfluorocarbon) (PFCs)					
四氟甲烷 (Freon-14) (CAS No.: 75-73-0)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
六氟乙烷 (Fluorocarbon 116) (CAS No.: 76-16-4)		mg/kg	1	n.d.	-
八氟丙烷 (Freon 218) (CAS No.: 76-19-7)		mg/kg	1	n.d.	-
十氟丁烷 (Decafluorobutane) (CAS No.: 355-25-9)		mg/kg	1	n.d.	-
八氟環丁烷 (Freon C318) (CAS No.: 115-25-3)		mg/kg	1	n.d.	-
全氟-1-丁烯 (Perfluor-1-butene) (CAS No.: 357-26-6)		mg/kg	1	n.d.	-
全氟異丁烯 (Perfluorisobutene) (CAS No.: 382-21-8)		mg/kg	1	n.d.	-
1,4-二氫八氟丁烷 (1,4-dihydrooctafluorobutane) (CAS No.: 377-36-6)		mg/kg	1	n.d.	-
2-全氟甲基丁烷 (Nonafluor-2-(trifluoromethyl)butane) (CAS No.: 594-91-2)		mg/kg	1	n.d.	-

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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)
全氟戊烷 (Perfluoro-n-pentane) (CAS No.: 678-26-2)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
2-全氟甲基戊烷 (2-Perfluoromethylpentane) (CAS No.: 355-04-4)		mg/kg	1	n.d.	-
全氟己烷 (Perfluorohexane) (CAS No.: 355-42-0)		mg/kg	1	n.d.	-
氟氯碳化物 (Chlorofluorocarbons) (CFCs)					
CFC-11	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
CFC-12		mg/kg	1	n.d.	-
CFC-113		mg/kg	1	n.d.	-
CFC-114		mg/kg	1	n.d.	-
CFC-115		mg/kg	1	n.d.	-
CFC-13		mg/kg	1	n.d.	-
CFC-111		mg/kg	1	n.d.	-
CFC-112		mg/kg	1	n.d.	-
CFC-211		mg/kg	1	n.d.	-
CFC-212		mg/kg	1	n.d.	-
CFC-213		mg/kg	1	n.d.	-
CFC-214		mg/kg	1	n.d.	-
CFC-215		mg/kg	1	n.d.	-
CFC-216		mg/kg	1	n.d.	-
CFC-217		mg/kg	1	n.d.	-

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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)
氟氯氫烷碳化物 (Hydrochlorofluorocarbons) (HCFCs)					
HCFC-21	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
HCFC-22		mg/kg	1	n.d.	-
HCFC-31		mg/kg	1	n.d.	-
HCFC-121		mg/kg	1	n.d.	-
HCFC-122		mg/kg	1	n.d.	-
HCFC-123		mg/kg	1	n.d.	-
HCFC-124		mg/kg	1	n.d.	-
HCFC-131		mg/kg	1	n.d.	-
HCFC-132b		mg/kg	1	n.d.	-
HCFC-133a		mg/kg	1	n.d.	-
HCFC-141b		mg/kg	1	n.d.	-
HCFC-142b		mg/kg	1	n.d.	-
HCFC-221		mg/kg	1	n.d.	-
HCFC-222		mg/kg	1	n.d.	-
HCFC-223		mg/kg	1	n.d.	-
HCFC-224		mg/kg	1	n.d.	-
HCFC-225ca		mg/kg	1	n.d.	-
HCFC-225cb		mg/kg	1	n.d.	-
HCFC-226		mg/kg	1	n.d.	-
HCFC-231		mg/kg	1	n.d.	-
HCFC-232		mg/kg	1	n.d.	-
HCFC-233		mg/kg	1	n.d.	-
HCFC-234		mg/kg	1	n.d.	-
HCFC-235		mg/kg	1	n.d.	-

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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)
HCFC-241	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
HCFC-242		mg/kg	1	n.d.	-
HCFC-243		mg/kg	1	n.d.	-
HCFC-244		mg/kg	1	n.d.	-
HCFC-251		mg/kg	1	n.d.	-
HCFC-252		mg/kg	1	n.d.	-
HCFC-253		mg/kg	1	n.d.	-
HCFC-261		mg/kg	1	n.d.	-
HCFC-262		mg/kg	1	n.d.	-
HCFC-271		mg/kg	1	n.d.	-
HCFC-141		mg/kg	1	n.d.	-
HCFC-142		mg/kg	1	n.d.	-
HCFC-151		mg/kg	1	n.d.	-
HCFC-225		mg/kg	1	n.d.	-
溴甲烷 (Methyl Bromide) (CAS No.: 74-83-9)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
海龍 (Halons)					
海龍-1211 (Halon-1211) (CAS No.: 353-59-3)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
海龍-1301 (Halon-1301) (CAS No.: 75-63-8)		mg/kg	1	n.d.	-
海龍-2402 (Halon-2402) (CAS No.: 124-73-2)		mg/kg	1	n.d.	-

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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)
不完全鹵化氟溴化物 (Hydrobromofluorocarbons) (HBFCs)					
HBFC-21B2 (CHFBr2) (CAS No.: 1868-53-7)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
HBFC-22B1 (CHF2Br) (CAS No.: 1511-62-2)		mg/kg	1	n.d.	-
HBFC-31B1 (CH2FBr) (CAS No.: 373-52-4)		mg/kg	1	n.d.	-
HBFC-121B4 (C2HFBr4)		mg/kg	1	n.d.	-
HBFC-122B3 (C2HF2Br3)		mg/kg	1	n.d.	-
HBFC-123B2 (C2HF3Br2)		mg/kg	1	n.d.	-
HBFC-124B1 (C2HF4Br)		mg/kg	1	n.d.	-
HBFC-131B3 (C2H2FBr3)		mg/kg	1	n.d.	-
HBFC-132B2 (C2H2F2Br2)		mg/kg	1	n.d.	-
HBFC-133B1 (C2H2F3Br)		mg/kg	1	n.d.	-
HBFC-141B2 (C2H3FBr2)		mg/kg	1	n.d.	-
HBFC-142B1 (C2H3F2Br)		mg/kg	1	n.d.	-
HBFC-151B1 (C2H4FBr)		mg/kg	1	n.d.	-
HBFC-221B6 (C3HFBr6)		mg/kg	1	n.d.	-
HBFC-222B5 (C3HF2Br5)		mg/kg	1	n.d.	-
HBFC-223B4 (C3HF3Br4)		mg/kg	1	n.d.	-
HBFC-224B3 (C3HF4Br3)		mg/kg	1	n.d.	-
HBFC-225B2 (C3HF5Br2)		mg/kg	1	n.d.	-
HBFC-226B1 (C3HF6Br)		mg/kg	1	n.d.	-
HBFC-231B5 (C3H2FBr5)		mg/kg	1	n.d.	-

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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)
HBFC-232B4 (C3H2F2Br4)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
HBFC-233B3 (C3H2F3Br3)		mg/kg	1	n.d.	-
HBFC-234B2 (C3H2F4Br2)		mg/kg	1	n.d.	-
HBFC-235B1 (C3H2F5Br)		mg/kg	1	n.d.	-
HBFC-241B4 (C3H3FBr4)		mg/kg	1	n.d.	-
HBFC-242B3 (C3H3F2Br3)		mg/kg	1	n.d.	-
HBFC-243B2 (C3H3F3Br2)		mg/kg	1	n.d.	-
HBFC-244B1 (C3H3F4Br)		mg/kg	1	n.d.	-
HBFC-251B3 (C3H4FBr3)		mg/kg	1	n.d.	-
HBFC-252B2 (C3H4F2Br2)		mg/kg	1	n.d.	-
HBFC-253B1 (C3H4F3Br)		mg/kg	1	n.d.	-
HBFC-261B2 (C3H5FBr2)		mg/kg	1	n.d.	-
HBFC-262B1 (C3H5F2Br)		mg/kg	1	n.d.	-
HBFC-271B1 (C3H6FBr)		mg/kg	1	n.d.	-
氯碳氫化物 (Chlorinate hydrocarbon) (CHCs)					
1,1,1,2-四氯乙烷 (1,1,1,2-Tetrachloroethane) (CAS No.: 630-20-6)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
1,1,1-三氯乙烷 (1,1,1-Trichloroethane) (CAS No.: 71-55-6)		mg/kg	1	n.d.	-
1,1,2,2-四氯乙烷 (1,1,2,2-Tetrachloroethane) (CAS No.: 79-34-5)		mg/kg	1	n.d.	-
1,1,2-三氯乙烷 (1,1,2-Trichloroethane) (CAS No.: 79-00-5)		mg/kg	1	n.d.	-

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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)
1,1-二氯乙烷 (1,1-Dichloroethane) (CAS No.: 75-34-3)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
1,1-二氯乙烯 (1,1-Dichloroethylene) (CAS No.: 75-35-4)		mg/kg	1	n.d.	-
1,1-二氯丙烯 (1,1-Dichloropropene) (CAS No.: 563-58-6)		mg/kg	1	n.d.	-
1,2,3-三氯丙烷 (1,2,3-Trichloropropane) (CAS No.: 96-18-4)		mg/kg	1	n.d.	-
1,2-二氯乙烷 (1,2-Dichloroethane) (CAS No.: 107-06-2)		mg/kg	1	n.d.	-
1,2-二氯丙烷 (1,2-Dichloropropane) (CAS No.: 78-87-5)		mg/kg	1	n.d.	-
1,3-二氯丙烷 (1,3-Dichloropropane) (CAS No.: 142-28-9)		mg/kg	1	n.d.	-
2,2-二氯丙烷 (2,2-Dichloropropane) (CAS No.: 594-20-7)		mg/kg	1	n.d.	-
四氯甲烷(四氯化碳) (Carbon tetrachloride) (CAS No.: 56-23-5)		mg/kg	1	n.d.	-
氯乙烷 (Chloroethane) (CAS No.: 75-00-3)		mg/kg	1	n.d.	-
氯仿 (Chloroform) (CAS No.: 67-66-3)		mg/kg	1	n.d.	-
氯甲烷 (Chloromethane) (CAS No.: 74-87-3)		mg/kg	1	n.d.	-
順-1,2-二氯乙烯 (cis-1,2-Dichloroethene) (CAS No.: 156-59-2)		mg/kg	1	n.d.	-

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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)
順-1,3-二氯丙烯 (cis-1,3-Dichloropropene) (CAS No.: 10061-01-5)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
六氯-1,3-丁二烯 (Hexachlorobutadiene) (CAS No.: 87-68-3)		mg/kg	1	n.d.	-
二氯甲烷 (Dichloromethane) (CAS No.: 75-09-2)		mg/kg	1	n.d.	-
四氯乙烯 (Tetrachloroethene) (CAS No.: 127-18-4)		mg/kg	1	n.d.	-
反-1,2-二氯乙烯 (trans-1,2-Dichloroethene) (CAS No.: 156-60-5)		mg/kg	1	n.d.	-
反-1,3-二氯丙烯 (trans-1,3-Dichloropropene) (CAS No.: 10061-02-6)		mg/kg	1	n.d.	-
三氯乙烯 (Trichloroethylene) (CAS No.: 79-01-6)		mg/kg	1	n.d.	-
六氟化硫 (Sulfur hexafluoride) (CAS No.: 2551-62-4)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
砷 (Arsenic) (As) (※ E)	參考RSTS-EE-SVHC-007，以感應耦合電漿發射光譜儀分析。(With reference to RSTS-EE-SVHC-007, analysis was performed by ICP-OES.)	mg/kg	50	n.d.	-
五氧化二砷 (As_2O_5) (Diarsenic pentaoxide (As_2O_5)) (CAS No.: 1303-28-2)	由砷結果計算得之。(Calculated from the result of Arsenic.)	mg/kg	50▲	n.d.	-

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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)
三氧化二砷 (As_2O_3) (Diarsenic trioxide (As_2O_3)) (CAS No.: 1327-53-3)	由砷結果計算得之。(Calculated from the result of Arsenic.)	mg/kg	50▲	n.d.	-
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP))	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1)		mg/kg	50	n.d.	-
鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (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 (DNOP)) (CAS No.: 117-84-0)		mg/kg	50	n.d.	-
鄰苯二甲酸二正己酯 (DNHP) (Di-n-hexyl phthalate (DNHP)) (CAS No.: 84-75-3)		mg/kg	50	n.d.	-
鄰苯二甲酸二甲酯 (DMP) (Dimethyl phthalate (DMP)) (CAS No.: 131-11-3)		mg/kg	50	n.d.	-
鄰苯二甲酸二環己酯 (DCHP) (Di-cyclohexyl phthalate (DCHP)) (CAS No.: 84-61-7)		mg/kg	50	n.d.	-

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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)
鄰苯二甲酸二苯酯 (DPhP) (Diphenyl phthalate (DPhP)) (CAS No.: 84-62-8)	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	-
鄰苯二甲酸二苯甲基酯 (Dibenzyl phthalate) (CAS No.: 523-31-9)		mg/kg	50	n.d.	-
鄰苯二甲酸二異辛酯 (DIOP) (Diisooctyl phthalate (DIOP)) (CAS No.: 27554-26-3)		mg/kg	50	n.d.	-
鄰苯二甲酸二丙酯 (DPrP) (Dipropyl phthalate (DPrP)) (CAS No.: 131-16-8)		mg/kg	50	n.d.	-
鄰苯二甲酸二正壬酯 (DNNP) (Di-n-nonyl phthalate (DNNP)) (CAS No.: 84-76-4)		mg/kg	50	n.d.	-
鄰苯二甲酸二乙酯 (DEP) (Di-ethyl phthalate (DEP)) (CAS No.: 84-66-2)		mg/kg	50	n.d.	-
二氯化鈷 ($CoCl_2$) (Cobalt dichloride ($CoCl_2$)) (CAS No.: 7646-79-9)	以感應耦合電漿發射光譜儀，離子層析儀分析；由氯、鈷的結果計算得之。(Analysis was performed by ICP-OES, IC. Calculated from the results of Cobalt, Chlorine.)	mg/kg	50▲	n.d.	-
溴氯甲烷 (Bromochloromethan) (CAS No.: 74-97-5)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
中鏈氯化石蠟(C14-C17) (MCCP) (Medium Chain Chlorinated Paraffins(C14-C17) (MCCP)) (CAS No.: 85535-85-9)	參考ISO 18219-2: 2021，以氣相層析儀/質譜儀分析。(With reference to ISO 18219-2: 2021, analysis was performed by GC/MS.)	mg/kg	50	n.d.	-

測試報告
Test Report

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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)
				No.1	
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	57500	-
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	386	-

備註(Note)：

1. mg/kg = ppm；0.1wt% = 0.1% = 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. 石綿定性分析試驗範圍： <0.1%~100%，石綿鑑定的判定基準是以檢出含有石綿纖維為『Positive』，未檢出石綿纖維為『Negative』。(Testing range of asbestos qualitative analysis is from less than 0.1% to 100%. The judgment criterion: asbestos fibers being found is shown as "Positive"; asbestos fibers not being found is shown as "Negative".)

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8. ▲：MDL是針對元素/測試化合物之評估。(The MDL was evaluated for element / tested substance.)
   換算公式 (Conversion Formula)：AX = A × F

AX	A	F
五氧化二砷 (Diarsenic pentaoxide)	砷 (Arsenic)	1.5339
三氧化二砷 (Diarsenic trioxide)	砷 (Arsenic)	1.3203
氧化鈹 (Beryllium oxide (BeO))	鈹 (Beryllium)	2.7753
氧化雙三丁基錫 (Bis(tributyltin)oxide) (TBTO)	三丁基錫 (Tributyl Tin) (TBT)	1.0276

   參數換算表 (Parameter Conversion Table)：
   https://eecloud.sgs.com/Region_TW/DocDownload.aspx?name=Others
9. (※ E): 被萃取出的溶出砷是以感應耦合電漿發射光譜儀檢測得之。(The extracted soluble Arsenic is detected by ICP-OES.)
10. 鈹青銅是一種主要成份為鈹及銅的合金, 當偵測不到總鈹含量時, 亦表示不含鈹青銅.
    (Since beryllium copper is a metal alloy of copper and beryllium and the test result is n.d. for beryllium, we can have conclusion that the beryllium copper is n.d..)
11. 除非另有說明，參照ILAC-G8:09/2019，採用簡單二元(w=0)允收規則進行符合性判定；根據此規則，符合性結果之判定係以測試結果與限值做比較。(Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.)
12. 本報告部份測試結果係引用自報告 ETR23703795 之樣品測試結果。(The some test results of this report were quoted from ETR23703795)

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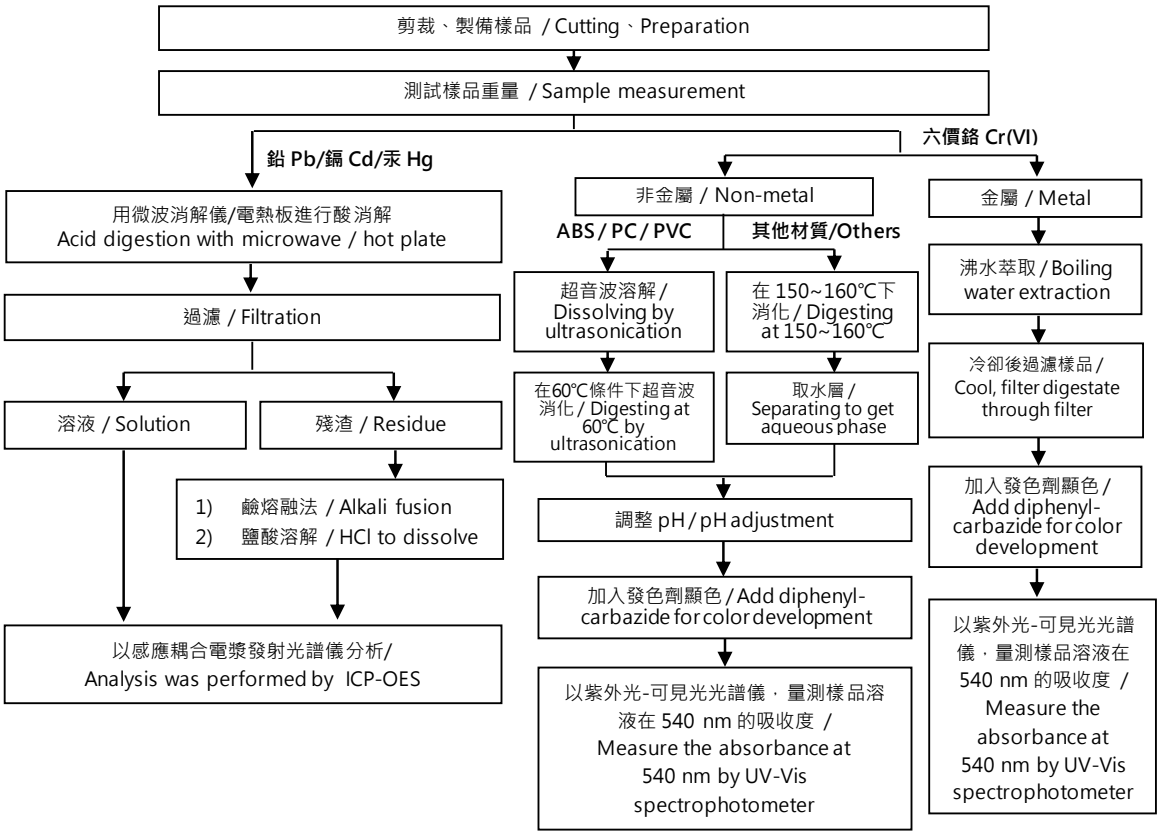
重金屬流程圖 / Analytical flow chart of heavy metal

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）



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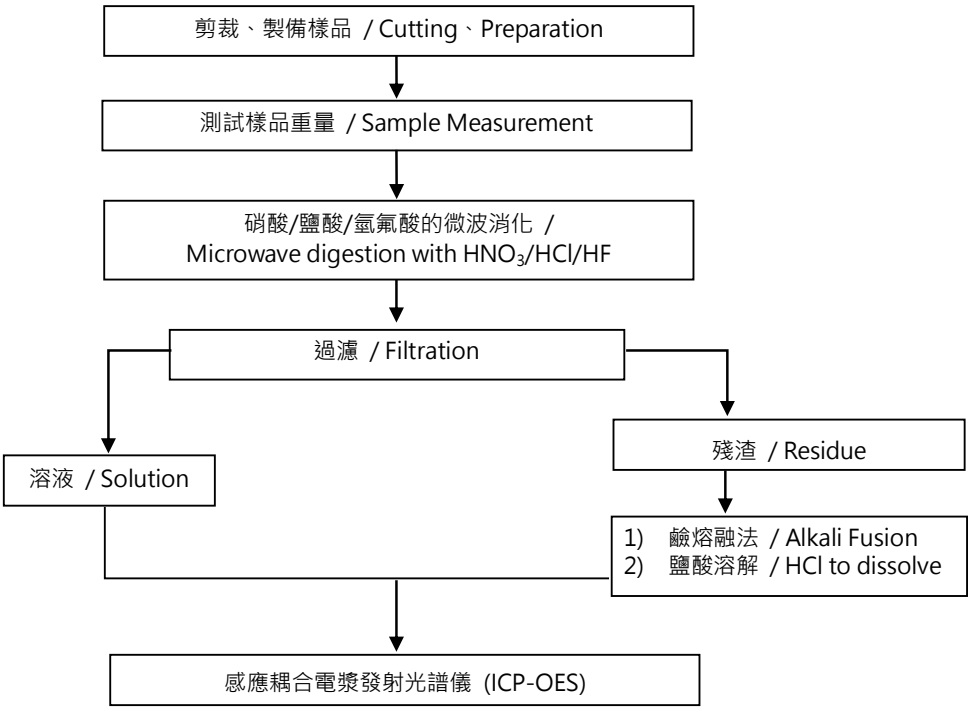
元素(含重金屬)分析流程圖 / Analytical flow chart of Elements (Heavy metal included)

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.
【參考方法/Reference method：US EPA 3051A、US EPA 3052】



* US EPA 3051A 方法未添加氫氟酸 / US EPA 3051A method does not add HF.

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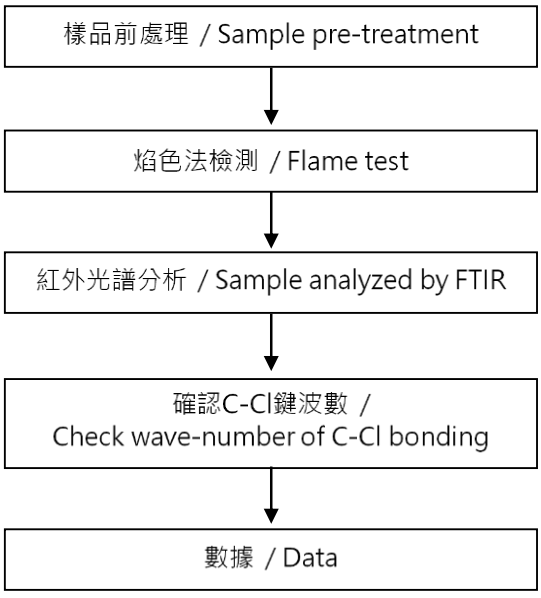
聚氯乙烯物質判定分析流程圖 / Analysis flow chart - PVC



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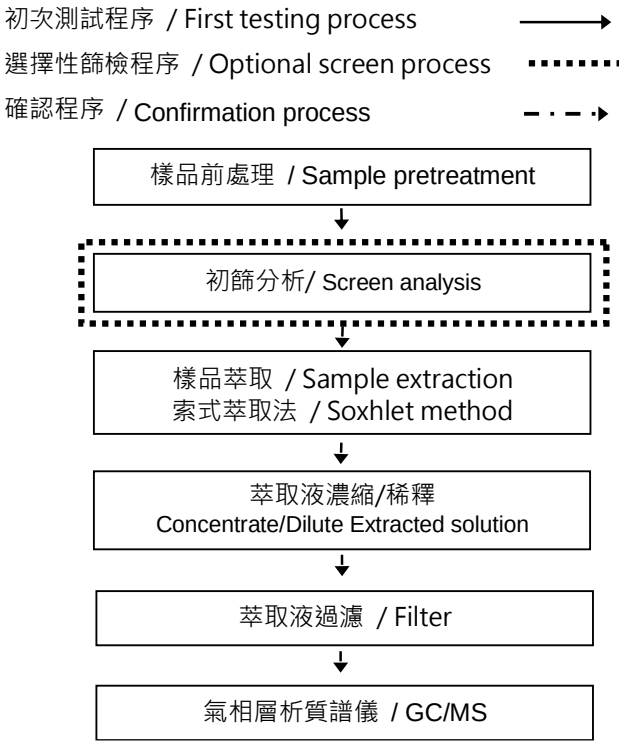
多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs



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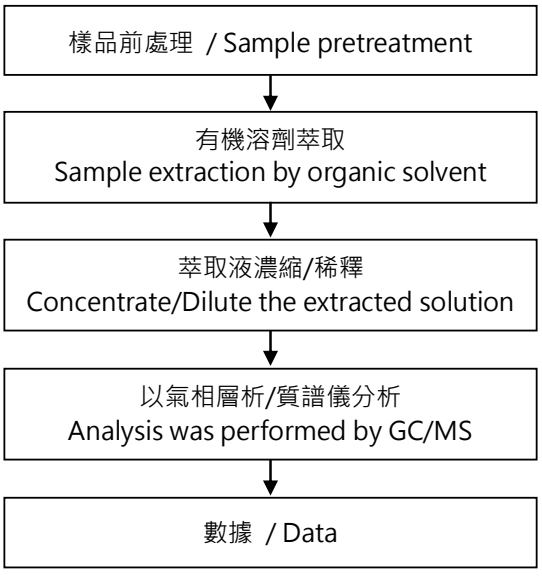
分析流程圖 / Analytical flow chart

【適用於：多氯聯苯、多氯奈、多氯三聯苯、滅蟻靈、氯化石蠟、DBBT】

*Apply to: PCBs, PCNs, PCTs, Mirex, Chlorinated Paraffins, DBBT



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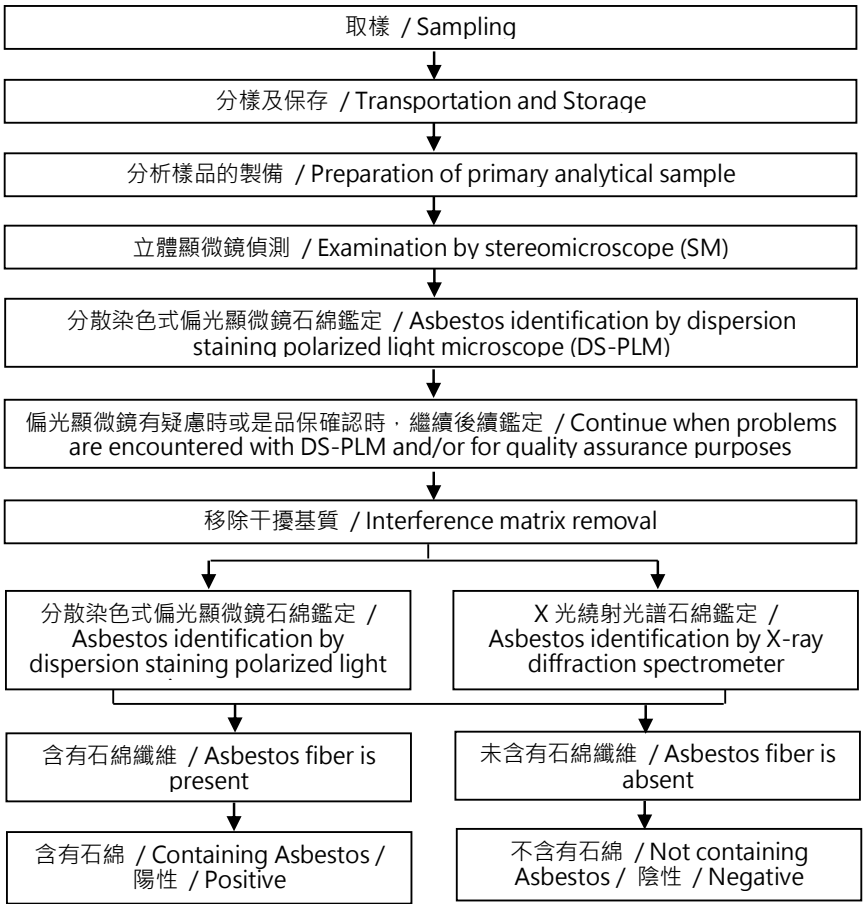
石綿鑑定分析流程圖 / Analysis flow chart for determination of Asbestos

【參考方法(Reference method): EPA 600/R-93/116】



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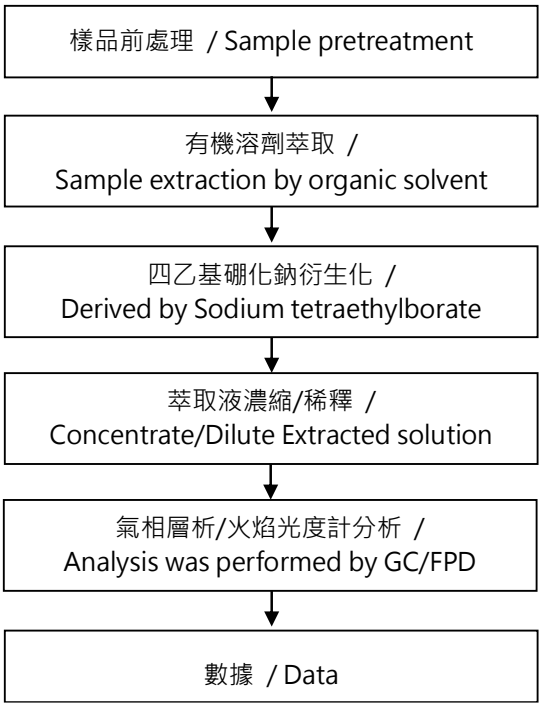
有機錫分析流程圖 / Analytical flow chart - Organic-Tin



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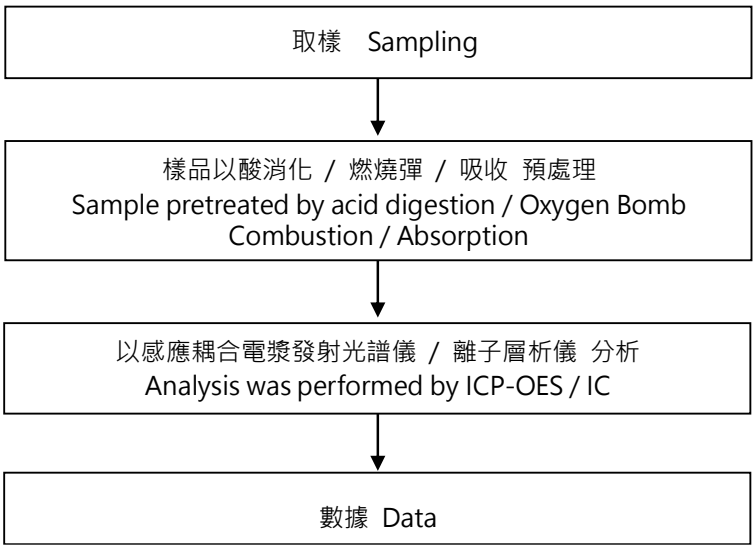
二氯化鈷分析流程圖 / Analytical flow chart - Cobalt dichloride



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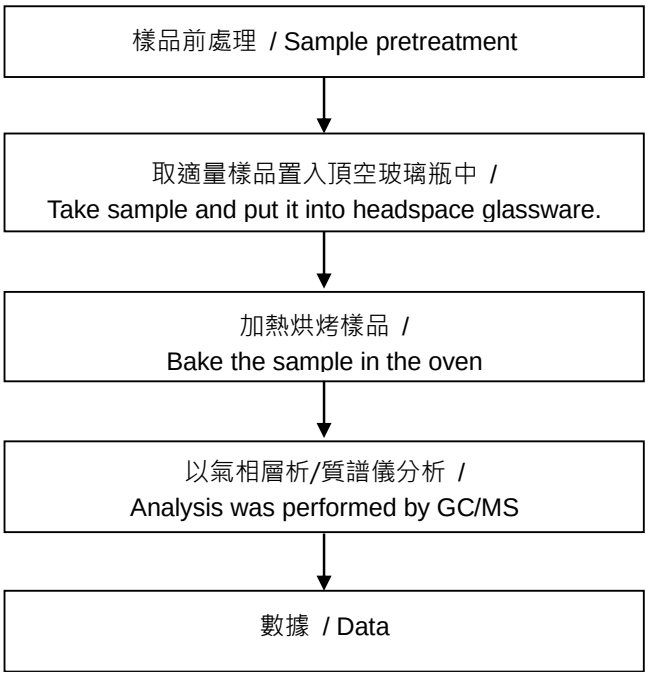
揮發性有機化合物分析流程圖 /
Analytical flow chart of volatile organic compounds (VOCs)

【參考方法/Reference method：US EPA 5021A】



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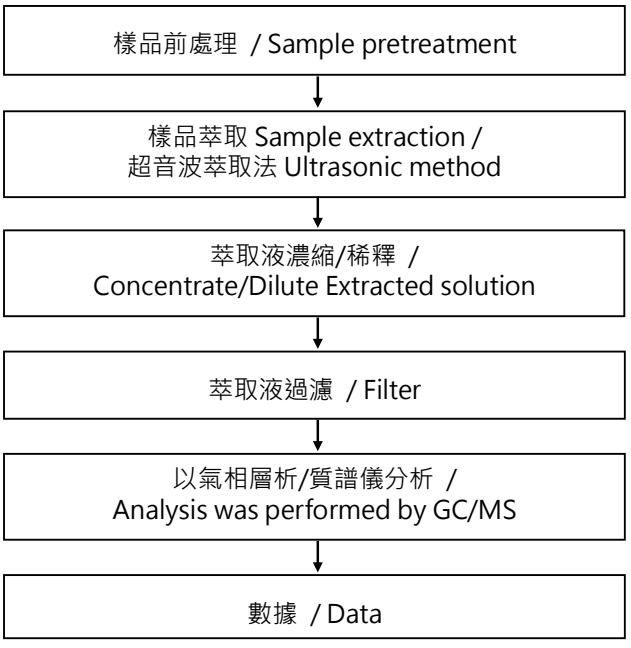
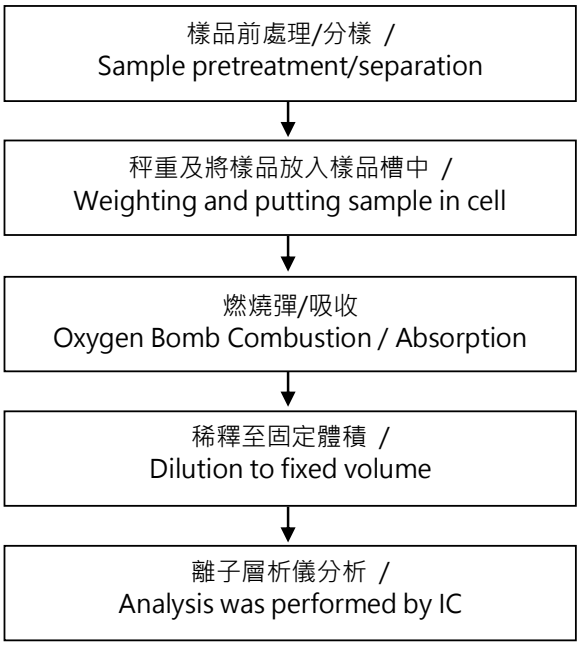
分析流程圖 / Analytical flow chart

* 適用於 / Apply to: 富馬酸二甲酯(DMFU)、六溴環十二烷(HBCDD)、乙二醇醚及其酯類(Ethylene glycol ether) 、有機磷化合物(Organic phosphorus compounds)、BNST



南亞塑膠工業股份有限公司 (NAN YA PLASTICS CORPORATION)
南亞電子材料(昆山)有限公司 (NANYA ELECTRONIC MATERIALS (KUNSHAN) CORP. LTD.)
南亞電子材料(惠州)有限公司 (NAN YA ELECTRONIC MATERIALS (HUIZHOU) CORP., LTD)
台北市松山區敦化北路201號 (NO. 201 TUNG HWA NORTH ROAD, SONGSHAN DIST., TAIPEI, TAIWAN, R.O.C.)
江蘇省昆山市昆山經濟技術開發區長江南路201號 (201 CHANG JIANG ROAD(S) KUNSHAN ECONOMIC & TECHNICAL DEVELOPMENT ZONE, KUNSHAN, JIANG SU, CHINA 215300)
廣東省惠州市博羅縣石灣鎮永石大道230號 (NO. 230, YONGSHI BOULEVARD SHIWAN TOWN BOLUO COUNTY HUIZHOU CITY GUANG DONG)

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



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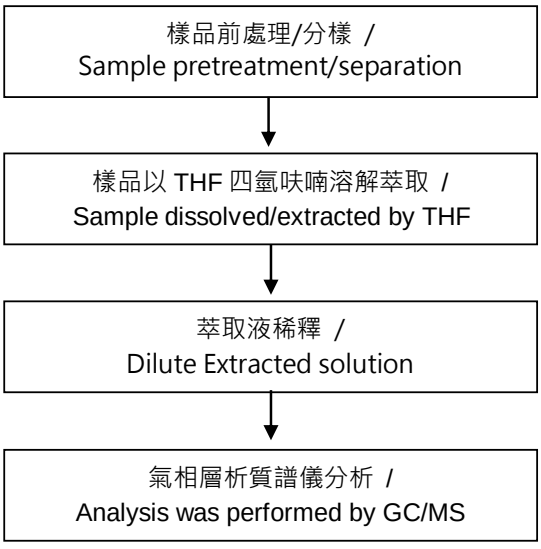
可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】



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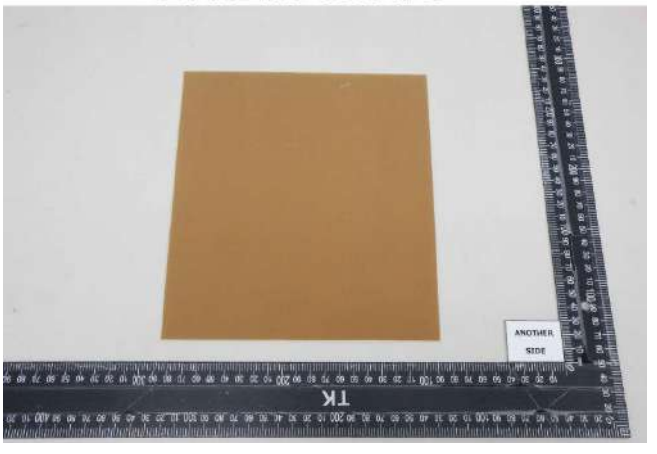
*** 照片中如有箭頭標示，則表示為實際檢測之樣品/部位. ***
(The tested sample / part is marked by an arrow if it's shown on the photo.)

ETR23703796

ETR23703796



** 報告結尾 (End of Report) **

測試報告
Test Report

號碼(No.): ETR23505135　　日期(Date): 01-Jun-2023　　

南亞塑膠工業股份有限公司 (NAN YA PLASTICS CORPORATION)
嘉義縣新港鄉中洋工業區2號 (NO. 2, CHUNGYANG INDUSTRIAL PARK, HSINKANG VILLAGE, CHIAYI COUNTY, 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 the applicant as)：

送樣廠商(Sample Submitted By)	:	南亞塑膠工業股份有限公司 (NAN YA PLASTICS CORPORATION)
樣品名稱(Sample Name)	:	ELECTRODEPOSITED COPPER FOIL (電解銅箔)
樣品型號(Style/Item No.)	:	NPHE、NPME、NPMEV、NPVE、NPVPE、TPS、TFS、VF、VFM、VFH、VFT、VHA、NPHEX、NPVS、NPUE、NAH、NAM、NAV、NAHP、NAHV、NAMP、NAVP、TLCV1、TLCV2、TLCV3、V1A、V1、V2、V0、V0B、TLCP2、TLCH、TLCHP、TLCH(P)、TLCHPV、VH、VH2、VC、VP、VS、VK、VR、CL、CL2、CLB、NPUE、NPUC、MH、MHD、H1、MG、H1V、ES、NPHG、NPHD、NPM、NPMD、NPMDV、NPV、NPVP、NPVT、NPU

==========

收件日(Sample Receiving Date)	:	29-May-2023
測試期間(Testing Period)	:	29-May-2023 to 01-Jun-2023

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) 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.)

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

CHECK REPORT
PIN CODE: DF3A44B9

測試報告
Test Report

南亞塑膠工業股份有限公司 (NAN YA PLASTICS CORPORATION)
嘉義縣新港鄉中洋工業區2號 (NO. 2, CHUNGYANG INDUSTRIAL PARK, HSINKANG VILLAGE, CHIAYI COUNTY, TAIWAN, R. O. C.)

測試部位敘述 (Test Part Description)

No.1 : 銅色/粉色銅箔 (COPPER/PINK FOIL)

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
鎘 (Cd) (Cadmium (Cd))	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))		mg/kg	2	n.d.	1000
汞 (Hg) (Mercury (Hg))	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
六價鉻 (Hexavalent Chromium) Cr(VI) (#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.	-
六價鉻 Cr(VI) (Hexavalent Chromium Cr(VI))	參考IEC 62321-7-2: 2017，以紫外光-可見光分光光度計分析。(With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.)	mg/kg	8	n.d.	-
六價鉻 Cr(VI) (Hexavalent Chromium Cr(VI)) (CAS No.: 18540-29-9)	參考US EPA 3060A: 1996 & US EPA 7196A: 1992，以紫外光-可見光分光光度計分析。(With reference to US EPA 3060A: 1996 & US EPA 7196A: 1992, analysis was performed by UV-VIS.)	mg/kg	2	n.d.	-

測試報告
Test Report

南亞塑膠工業股份有限公司 (NAN YA PLASTICS CORPORATION)
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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)
一溴聯苯 (Monobromobiphenyl)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	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)		mg/kg	5	n.d.	-
多溴聯苯總和 (Sum of PBBs)		mg/kg	-	n.d.	1000
一溴聯苯醚 (Monobromodiphenyl ether)		mg/kg	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	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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測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP))	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP))	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP))	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-8)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.	-
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1)		mg/kg	50	n.d.	-
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)		mg/kg	50	n.d.	-
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)		mg/kg	50	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.	-
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.	-
四溴雙酚-A (TBBP-A) (Tetrabromobisphenol A (TBBP-A)) (CAS No.: 79-94-7)	參考RSTS-E&E-121，以液相層析儀/質譜儀分析。(With reference to RSTS-E&E-121, analysis was performed by LC/MS.)	mg/kg	10	n.d.	-

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備註(Note)：

1. mg/kg = ppm；0.1wt% = 0.1% = 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. 全氟辛烷磺酸及其鹽類包含等物質 (PFOS and its salts including) :
   CAS No.: 1763-23-1, 2795-39-3, 29457-72-5, 29081-56-9, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7, 91036-71-4, 4021-47-0 and others.
6. 全氟辛酸及其鹽類包含等物質 (PFOA and its salts including) :
   CAS No.: 335-67-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0, 3825-26-1 and others.
7. (#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 μg/cm² 時，無法確定塗層是否含有六價鉻。(The result between 0.10 μg/cm² and 0.13 μg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.)
8. 除非另有說明，參照ILAC-G8:09/2019，採用簡單二元(w=0)允收規則進行符合性判定；根據此規則，符合性結果之判定係以測試結果與限值做比較。(Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.)

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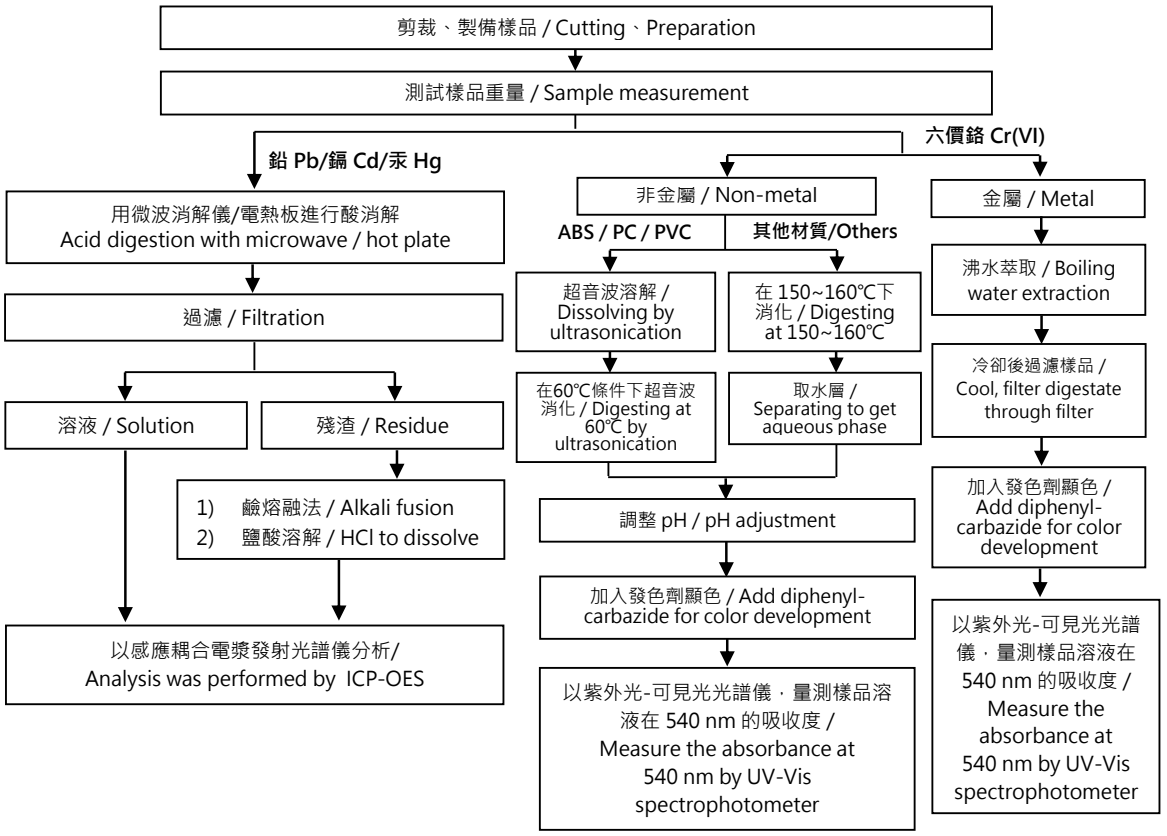
重金屬流程圖 / Analytical flow chart of heavy metal

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）



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六價鉻分析流程圖 / Analytical flow chart - Hexavalent Chromium Cr(VI)

Test method: EPA 3060A

剪裁、製備樣品 / Cutting、Preparation

↓

測試樣品重量 / Sample Measurement

↓

添加適量鹼性消化液 / Add appropriate amount of alkaline digestion reagent

↓

加熱至適當溫度進行消化萃取 / Heat to appropriate temperature to extract

↓

冷卻後過濾樣品 / Cool, filter digestate through filter

↓

加入發色劑顯色 / Add diphenyl-carbazide for color development

↓

以紫外光-可見光光譜儀，量測樣品溶液在 540 nm 的吸收度 / measure the absorbance at 540 nm by UV-VIS

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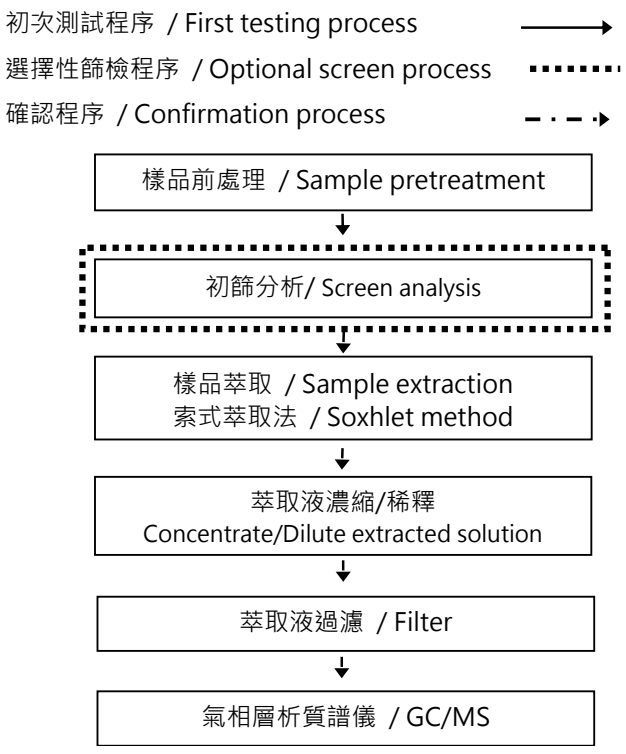
多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs



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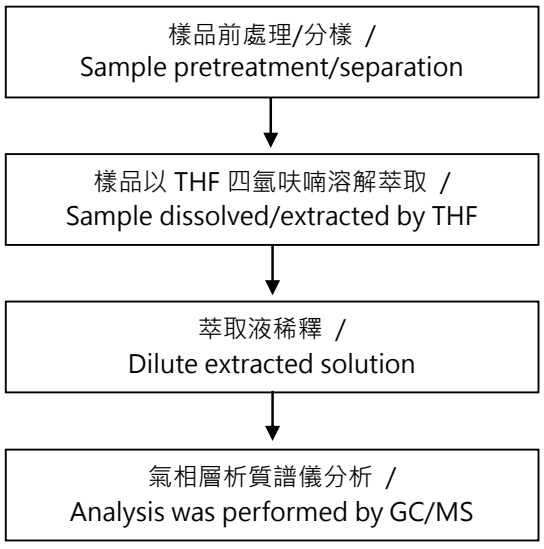
可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】



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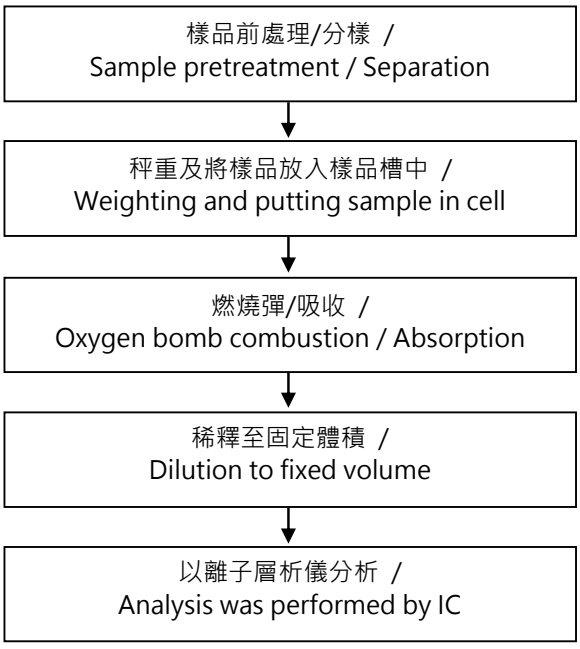
鹵素分析流程圖 / Analytical flow chart - Halogen



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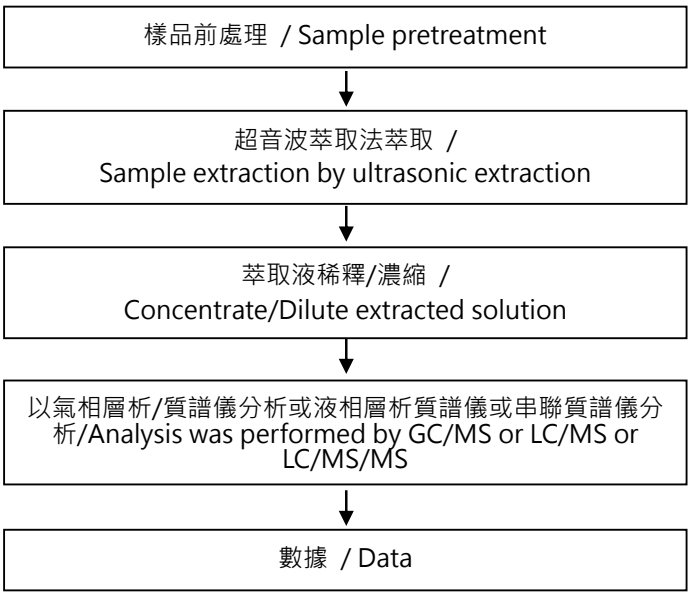
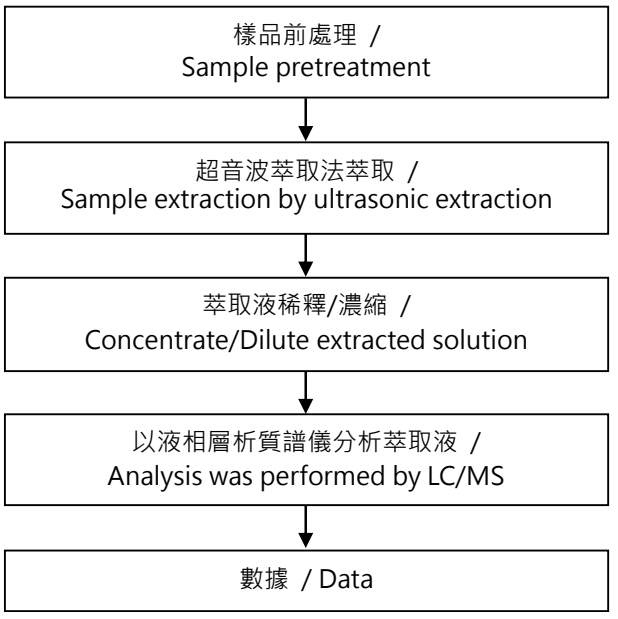
嘉義縣新港鄉中洋工業區2號 (NO. 2, CHUNGYANG INDUSTRIAL PARK, HSINKANG VILLAGE, CHIAYI COUNTY, TAIWAN, R. O. C.)

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)分析流程圖 / Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



南亞塑膠工業股份有限公司 (NAN YA PLASTICS CORPORATION)
嘉義縣新港鄉中洋工業區2號 (NO. 2, CHUNGYANG INDUSTRIAL PARK, HSINKANG VILLAGE, CHIAYI COUNTY, TAIWAN, R. O. C.)

四溴雙酚-A 分析流程圖 / Analytical flow chart - TBBP-A

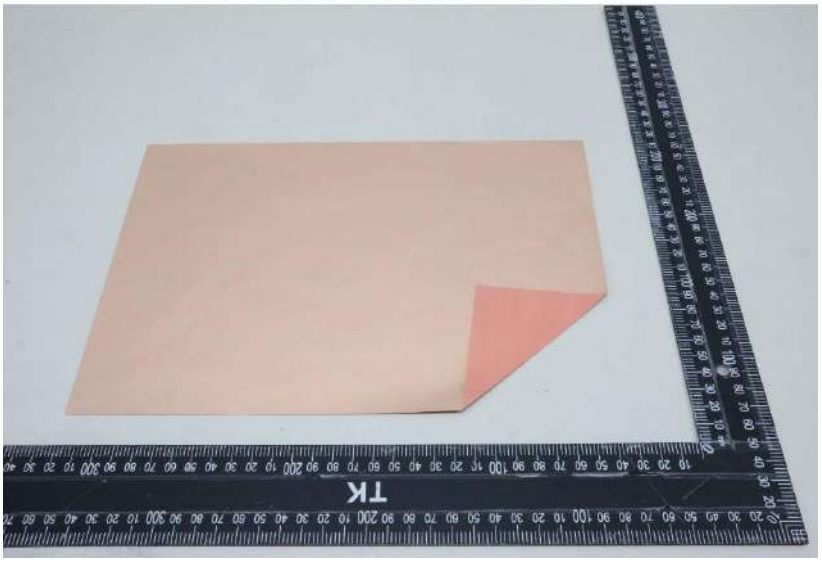


測試報告
Test Report

南亞塑膠工業股份有限公司 (NAN YA PLASTICS CORPORATION)
嘉義縣新港鄉中洋工業區2號 (NO. 2, CHUNGYANG INDUSTRIAL PARK, HSINKANG VILLAGE, CHIAYI COUNTY, TAIWAN, R. O. C.)

*** 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.)

ETR23505135



** 報告結尾 (End of Report) **

測試報告
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號碼(No.): ETR23A00862M01　　日期(Date): 13-Oct-2023　　頁數(Page): 1 of 16

川裕工業股份有限公司 (CHUNG YU INDUSTRY CORPORATION)
桃園市平鎮區延平路三段618號 (NO. 618, SEC. 3, YANPING RD., PINGZHEN DIST., TAOYUAN CITY 324013, 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 the applicant as)：

送樣廠商(Sample Submitted By)	:	川裕工業股份有限公司 (CHUNG YU INDUSTRY CORPORATION)
樣品名稱(Sample Name)	:	INK(ZSR-150)W
樣品型號(Style/Item No.)	:	ZM-400WF, 400WF, ZM-400WF(HF), ZM-400WF-1, 400WF-1, ZM-400WF(N), ZM-400WB, ZM-480W, ZM-680W, WNY, WNA, WNB, NWB, WH, WM, WN, WL, WH(N), WH(H), 13A089, PC-W, IC-W, 100W, SW, 580W, SP-W, 2K-W, FMW, FMW-1, PHP-80K, PHP-90K, 928

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收件日(Sample Receiving Date)	:	04-Oct-2023
測試期間(Testing Period)	:	04-Oct-2023 to 13-Oct-2023

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) 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.)

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

CHECK REPORT
PIN CODE: 31443E28

測試報告
Test Report

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測試部位敘述 (Test Part Description)

No.1 : 白色塊狀 (WHITE LUMP)

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
鎘 (Cd) (Cadmium (Cd))	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))	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	4.86	1000
汞 (Hg) (Mercury (Hg))	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
六價鉻 Cr(VI) (Hexavalent Chromium Cr(VI))	參考IEC 62321-7-2: 2017，以紫外光-可見光分光光度計分析。(With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.)	mg/kg	8	n.d.	1000
一溴聯苯 (Monobromobiphenyl)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	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)		mg/kg	5	n.d.	-
多溴聯苯總和 (Sum of PBBs)		mg/kg	-	n.d.	1000

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Test Report

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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)
一溴聯苯醚 (Monobromodiphenyl ether)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	mg/kg	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	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
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP))	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1)		mg/kg	50	n.d.	-
鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (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 (DNOP)) (CAS No.: 117-84-0)		mg/kg	50	n.d.	-
鄰苯二甲酸二正己酯 (DNHP) (Di-n-hexyl phthalate (DNHP)) (CAS No.: 84-75-3)		mg/kg	50	n.d.	-
鄰苯二甲酸二正戊酯 (DNPP) (Di-n-pentyl phthalate (DNPP)) (CAS No.: 131-18-0)		mg/kg	50	n.d.	-

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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)
鄰苯二甲酸二異戊酯 (DIPP) (Diisopentyl phthalate (DIPP)) (CAS No.: 605-50-5)	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	-
鄰苯二甲酸雙(2-甲氧基乙基)酯 (DMEP) (Bis(2-methoxyethyl) phthalate (DMEP)) (CAS No.: 117-82-8)		mg/kg	50	n.d.	-
鄰苯二甲酸二乙酯 (DEP) (Di-ethyl phthalate (DEP)) (CAS No.: 84-66-2)		mg/kg	50	n.d.	-
鄰苯二甲酸二甲酯 (DMP) (Dimethyl phthalate (DMP)) (CAS No.: 131-11-3)		mg/kg	50	n.d.	-
六溴環十二烷及所有主要被辨別出的異構物(HBCDD) (α- HBCDD, β- HBCDD, γ- HBCDD) (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))	參考IEC 62321-9: 2021，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-9: 2021, analysis was performed by GC/MS.)	mg/kg	20	n.d.	-
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-8)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.	-
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1)		mg/kg	50	560	-
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)		mg/kg	50	n.d.	-
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)		mg/kg	50	n.d.	-

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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)
全氟辛烷磺酸及其鹽類 (PFOS and its salts) (CAS No.: 1763-23-1 and its salts)	參考DIN CEN/TS 15968: 2010，以液相層析串聯質譜儀分析。(With reference to DIN CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟辛酸及其鹽類 (PFOA and its salts) (CAS No.: 335-67-1 and its salts)	參考DIN CEN/TS 15968: 2010，以液相層析串聯質譜儀分析。(With reference to DIN CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
短鏈氯化石蠟(C10-C13) (SCCP) (Short Chain Chlorinated Paraffins(C10-C13) (SCCP)) (CAS No.: 85535-84-8)	參考ISO 18219-1: 2021，以氣相層析儀/質譜儀分析。(With reference to ISO 18219-1: 2021, analysis was performed by GC/MS.)	mg/kg	50	n.d.	-
銻 (Sb) (Antimony (Sb)) (CAS No.: 7440-36-0)	參考US EPA 3052: 1996，以感應耦合電漿發射光譜儀分析。(With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	-

備註(Note)：

1. mg/kg = ppm；0.1wt% = 0.1% = 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. 除非另有說明，參照ILAC-G8:09/2019，採用簡單二元(w=0)允收規則進行符合性判定；根據此規則，符合性結果之判定係以測試結果與限值做比較。(Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.)
6. 本報告為 ETR23A00862 之異動報告。(This is the additional test report of ETR23A00862.)

川裕工業股份有限公司 (CHUNG YU INDUSTRY CORPORATION)
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PFAS Remark：

現有PFAS定量技術是分析PFAS物質的特定結構，但同碳數族群之PFAS酸及鹽類物質，其可被辨識的特定結構相同，因此無法區別所分析的特定結構是來自酸或者鹽類，故測試結果為同碳數族群之PFAS之酸及鹽類物質的濃度總合。下表PFAS物質濃度皆已包含在測試結果中，相關資訊請參見下表：(下表列舉PFAS物質僅為範例，並不包含所有同碳數族群之PFAS鹽類。)
(The quantitative technology of PFAS is to analyze the specific structure of PFAS substances. However, PFAS acid and its salts with the same carbon number group have the same specific structure that can be identified. The tested results of the analyzed specific structure cannot be distinguished to identify the contribution from PFAS acid or its salts. Therefore, the tested results display the sum of concentrations of PFAS acids and its salts with the same carbon number group. The concentration of PFAS substances in the below table have been included in the tested results, please refer to the table for relevant information: (The listed PFAS substances are examples only, it do not include all PFAS salts with the same carbon number group.))

物質濃度分類 (Classification of Substance Concentration)	物質名稱 (Substance Name)	CAS No.
全氟辛烷磺酸及其鹽類 Perfluorooctane sulfonates and its salts (PFOS and its salts) (CAS No.: 1763-23-1 and its salts)	全氟辛基磺酸鉀 (PFOS-K) Potassium perfluorooctanesulfonate (PFOS-K)	2795-39-3
	全氟辛基磺酸鋰 (PFOS-Li) Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	29457-72-5
	全氟辛基磺酸銨 (PFOS-NH_4) Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH_4)	29081-56-9

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物質濃度分類 (Classification of Substance Concentration)	物質名稱 (Substance Name)	CAS No.
全氟辛烷磺酸及其鹽類 Perfluorooctane sulfonates and its salts (PFOS and its salts) (CAS No.: 1763-23-1 and its salts)	全氟辛基磺酸二乙醇銨 (PFOS-$NH(OH)_2$) Perfluorooctane sulfonate diethanolamine salt (PFOS-$NH(OH)_2$)	70225-14-8
	全氟辛基磺酸四乙基銨 (PFOS-$N(C_2H_5)_4$) Perfluorooctanesulfonic acid,tetraethylammonium salt (PFOS-$N(C_2H_5)_4$)	56773-42-3
	全氟辛基磺酸二癸二甲基銨 (PFOS-DDA) N-decyl-N,N-dimethyldecan-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-sulfonate (PFOS-DDA)	251099-16-8
	全氟辛基磺醯氟 (POSF) Perfluorooctane sulfonyl fluoride (POSF)	307-35-7
	全氟辛基磺酸鎂 (PFOS-Mg) Perfluorooctanesulfonic acid, magnesium salt (PFOS-Mg)	91036-71-4
	全氟辛基磺酸鈉 (PFOS-Na) Perfluorooctanesulfonic acid, sodium salt (PFOS-Na)	4021-47-0
全氟辛酸及其鹽類 Perfluorooctanoic acid and its salts (PFOA and its salts) (CAS No.: 335-67-1 and its salts)	全氟辛酸鈉 (PFOA-Na) Sodium perfluorooctanoate (PFOA-Na)	335-95-5
	全氟辛酸鉀 (PFOA-K) Potassium perfluorooctanoate (PFOA-K)	2395-00-8
	全氟辛酸銀 (PFOA-Ag) Silver perfluorooctanote (PFOA-Ag)	335-93-3
	全氟辛氟 (PFOA-F) Perfluorooctanoyl fluoride (PFOA-F)	335-66-0
	全氟辛酸銨 (APFO) Ammonium pentadecafluorooctanoate (APFO)	3825-26-1
	全氟辛酸鋰 (PFOA-Li) Lithium perfluorooctanoate (PFOA-Li)	17125-58-5

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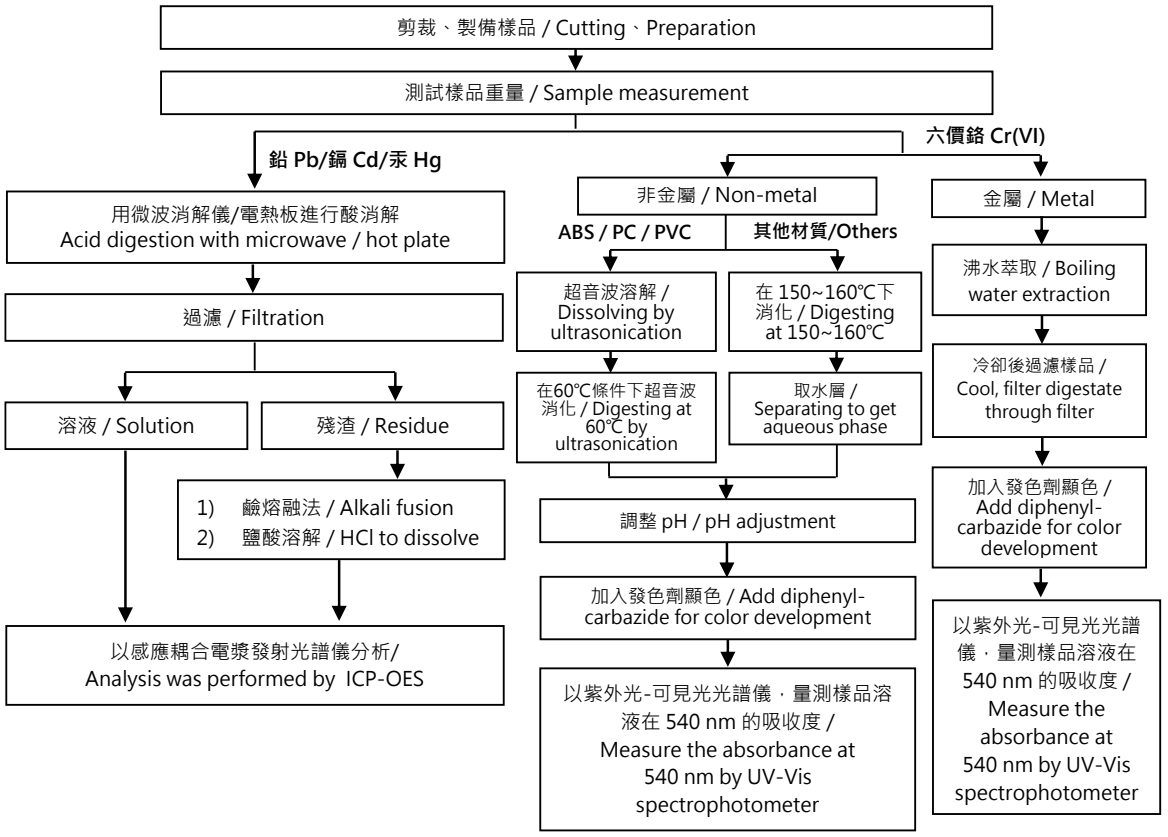
重金屬流程圖 / Analytical flow chart of heavy metal

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）



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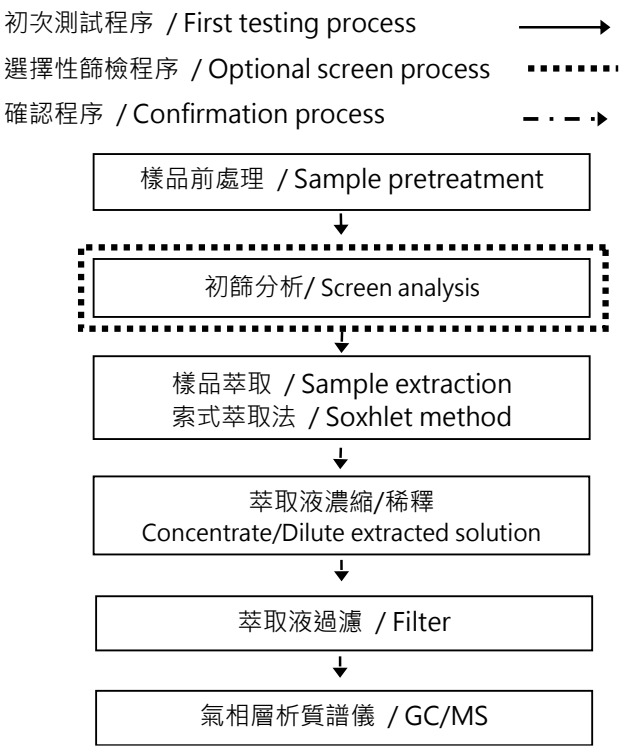
多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs



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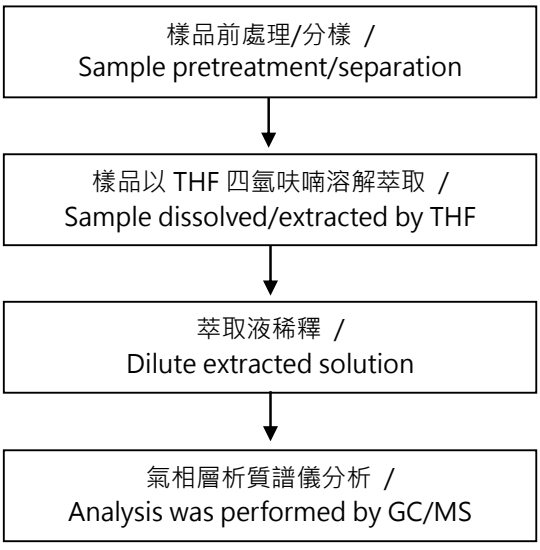
可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】



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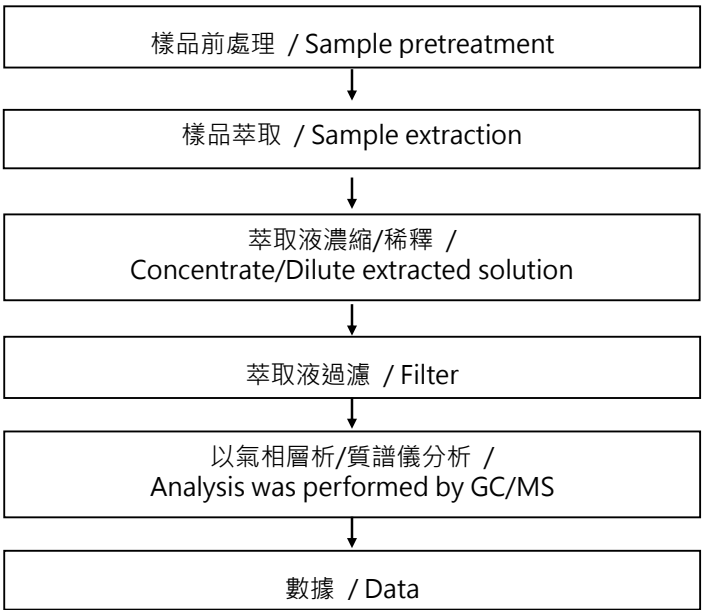
六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD



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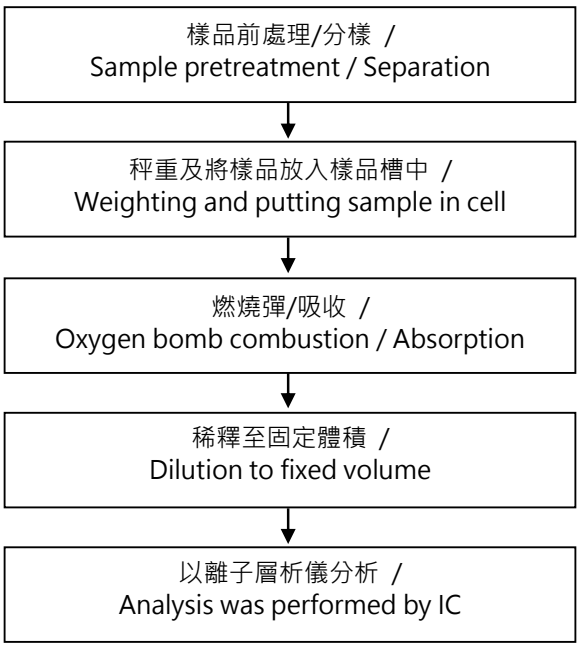
鹵素分析流程圖 / Analytical flow chart - Halogen



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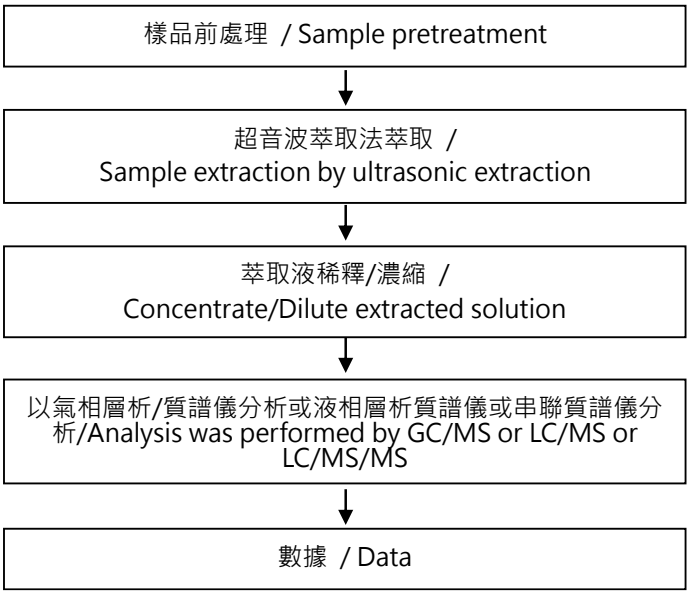
全氟化合物(包含全氟辛酸/全氟辛烷磺酸/其相關化合物等等)分析流程圖 / Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



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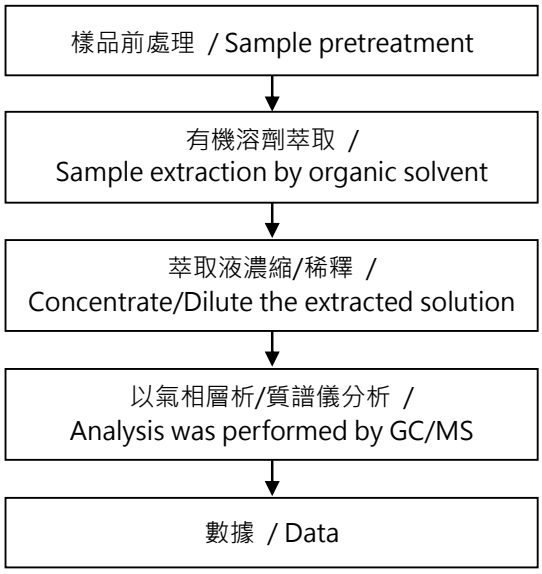
分析流程圖 / Analytical flow chart

【適用於：多氯聯苯、多氯奈、多氯三聯苯、滅蟻靈、氯化石蠟、DBBT】

*Apply to: PCBs, PCNs, PCTs, Mirex, Chlorinated Paraffins, DBBT



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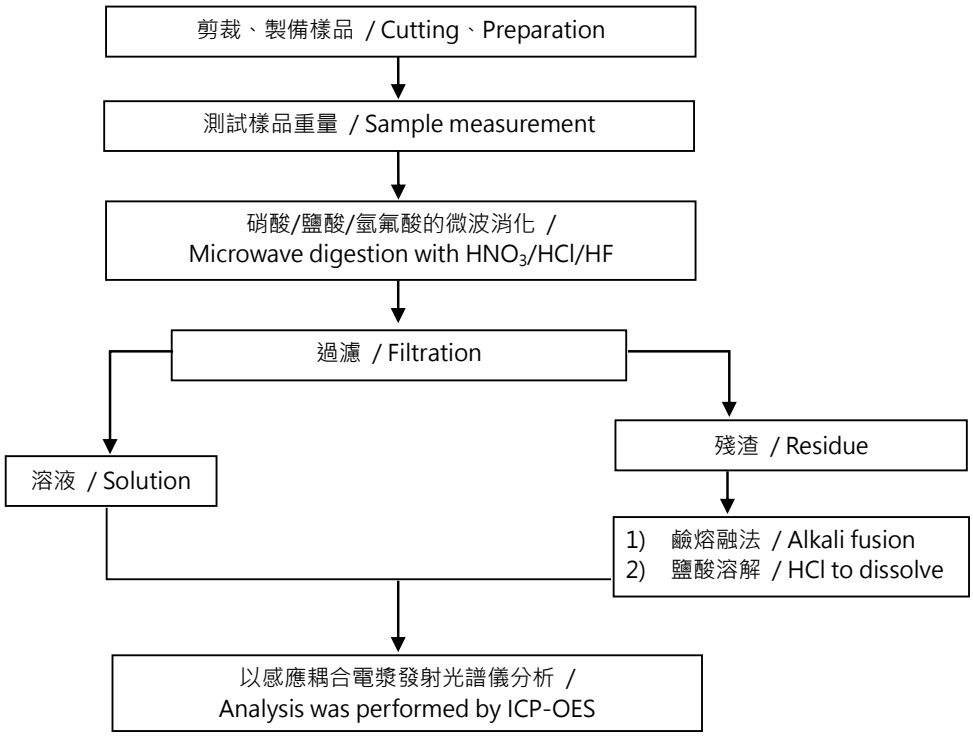
元素(含重金屬)分析流程圖 / Analytical flow chart of elements (Heavy metal included)

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.

【參考方法/Reference method：US EPA 3051A、US EPA 3052】



* US EPA 3051A 方法未添加氫氟酸 / US EPA 3051A method does not add HF.

測試報告
Test Report

川裕工業股份有限公司 (CHUNG YU INDUSTRY CORPORATION)
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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.)

ETR23A00862

** 報告結尾 (End of Report) **

測試報告
Test Report

號碼(No.): ETR23800275M05 日期(Date): 09-Aug-2023

聯致科技股份有限公司 (ADVANCE MATERIALS CORPORATION LTD.)
桃園市楊梅區新農街二段209巷168號 (NO. 168, LN. 209, SEC. 2, XINNONG ST., YANGMEI DISTRICT, TAOYUAN CITY 326, 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 the applicant as)：

送樣廠商(Sample Submitted By)	:	聯致科技股份有限公司 (ADVANCE MATERIALS CORPORATION LTD.)
樣品名稱(Sample Name)	:	LIQUID PHOTOIMAGEABLE SOLDER MASK
樣品型號(Style/Item No.)	:	PSR-550B K64

==========

收件日(Sample Receiving Date)	:	01-Aug-2023
測試期間(Testing Period)	:	01-Aug-2023 to 09-Aug-2023

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.)

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

CHECK REPORT
PIN CODE: 015EF429

測試報告
Test Report

聯致科技股份有限公司 (ADVANCE MATERIALS CORPORATION LTD.)
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測試部位敘述 (Test Part Description)

No.1 : 黑色塊狀 (BLACK LUMP)

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
鎘 (Cd) (Cadmium (Cd))	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.
鉛 (Pb) (Lead (Pb))	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.
汞 (Hg) (Mercury (Hg))	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.
六價鉻 Cr(VI) (Hexavalent Chromium Cr(VI))	參考IEC 62321-7-2: 2017，以紫外光-可見光分光光度計分析。(With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.)	mg/kg	8	n.d.
一溴聯苯 (Monobromobiphenyl)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	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)		mg/kg	5	n.d.
多溴聯苯總和 (Sum of PBBs)		mg/kg	-	n.d.

測試報告
Test Report

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測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
一溴聯苯醚 (Monobromodiphenyl ether)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	mg/kg	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	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.
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP))	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP))		mg/kg	50	n.d.
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP))		mg/kg	50	n.d.
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))		mg/kg	50	n.d.
鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1)		mg/kg	50	n.d.
鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (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 (DNOP)) (CAS No.: 117-84-0)		mg/kg	50	n.d.
鄰苯二甲酸二正戊酯 (DNPP) (Di-n-pentyl phthalate (DNPP)) (CAS No.: 131-18-0)		mg/kg	50	n.d.
鄰苯二甲酸二正己酯 (DNHP) (Di-n-hexyl phthalate (DNHP)) (CAS No.: 84-75-3)		mg/kg	50	n.d.

測試報告
Test Report

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測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
六溴環十二烷及所有主要被辨別出的異構物(HBCDD) (α- HBCDD, β- HBCDD, γ- HBCDD) (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))	參考IEC 62321: 2008，以氣相層析儀/質譜儀分析。(With reference to IEC 62321: 2008, analysis was performed by GC/MS.)	mg/kg	5	n.d.
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-8)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	976
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1)		mg/kg	50	313
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)		mg/kg	50	n.d.
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)		mg/kg	50	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.
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.
多氯聯苯 (PCBs) (Polychlorinated biphenyls (PCBs))	參考US EPA 3550C: 2007，以氣相層析儀/質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.)	mg/kg	0.5	n.d.
紅磷 (Red Phosphorus)	以熱裂解-氣相層析儀/質譜儀分析。(Analysis was performed by Pyrolyzer-GC/MS.)	**	-	Negative

測試報告
Test Report

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測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
多環芳香烴 (Polycyclic Aromatic Hydrocarbons) (PAHs)				
苯駢(a)芘 (Benzo[a]pyrene) (CAS No.: 50-32-8)	參考AfPS GS 2019:01 PAK，以氣相層析儀/質譜儀分析。(With reference to AfPS GS 2019:01 PAK, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.
苯駢(e)芘 (Benzo[e]pyrene) (CAS No.: 192-97-2)		mg/kg	0.2	n.d.
苯駢蒽 (Benzo[a]anthracene) (CAS No.: 56-55-3)		mg/kg	0.2	n.d.
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 No.: 205-82-3)		mg/kg	0.2	n.d.
苯(k)苯駢芴 (Benzo[k]fluoranthene) (CAS No.: 207-08-9)		mg/kg	0.2	n.d.
蕗 (Chrysene) (CAS No.: 218-01-9)		mg/kg	0.2	n.d.
二苯駢蒽 (Dibenzo[a,h]anthracene) (CAS No.: 53-70-3)		mg/kg	0.2	n.d.
苯駢苝 (Benzo[g,h,i]perylene) (CAS No.: 191-24-2)		mg/kg	0.2	n.d.
茚酮芘 (Indeno[1,2,3-c,d]pyrene) (CAS No.: 193-39-5)		mg/kg	0.2	n.d.
蒽 (Anthracene) (CAS No.: 120-12-7)		mg/kg	0.2	n.d.
苯駢芴 (Fluoranthene) (CAS No.: 206-44-0)		mg/kg	0.2	n.d.
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	942
多環芳香烴15項總和 (Sum of 15 PAHs)		mg/kg	-	942

測試報告
Test Report

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測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
三苯基錫 (TPT) (Triphenyl tin (TPT))	參考ISO 17353: 2004，以氣相層析儀/火焰光度偵測器分析。(With reference to ISO 17353: 2004, analysis was performed by GC/FPD.)	mg/kg	0.03	n.d.
三丁基錫 (TBT) (Tributyl tin (TBT))		mg/kg	0.03	n.d.
二辛基錫 (DOT) (Dioctyl tin (DOT))		mg/kg	0.03	n.d.
二丁基錫 (DBT) (Dibutyl tin (DBT))		mg/kg	0.03	n.d.
氧化雙三丁基錫 (TBTO) (Bis(tributyltin) oxide (TBTO)) (CAS No.: 56-35-9)	由三丁基錫測試結果計算得之。(Calculated from the result of Tributyl Tin (TBT).)	mg/kg	0.03▲	n.d.
聚氯乙烯 (Polyvinyl chloride) (PVC)	參考ASTM E1252: 2021，以傅立葉轉換紅外線光譜儀及焰色法分析。(With reference to ASTM E1252: 2021, analysis was performed by FT-IR and Flame Test.)	**	-	Negative
甲醛 (Formaldehyde) (CAS No.: 50-00-0)	參考ISO 17226-1: 2021，以液相層析儀/二極體陣列偵測器分析。(With reference to ISO 17226-1: 2021, analysis was performed by LC/DAD.)	mg/kg	3	n.d.
銻 (Sb) (Antimony (Sb)) (CAS No.: 7440-36-0)	參考US EPA 3052: 1996，以感應耦合電漿發射光譜儀分析。(With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.)	mg/kg	2	n.d.
鈹 (Be) (Beryllium (Be)) (CAS No.: 7440-41-7)	參考US EPA 3052: 1996，以感應耦合電漿發射光譜儀分析。(With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.)	mg/kg	2	n.d.
苯 (Benzene) (CAS No.: 71-43-2)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.
甲苯 (Toluene) (CAS No.: 108-88-3)	參考US EPA 5021A: 2014，以氣相層析儀/質譜儀分析。(With reference to US EPA 5021A: 2014, analysis was performed by GC/MS.)	mg/kg	1	n.d.

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備註(Note)：

1. mg/kg = ppm；0.1wt% = 0.1% = 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. 全氟辛烷磺酸及其鹽類包含等物質 (PFOS and its salts including)：
   CAS No.: 1763-23-1, 2795-39-3, 29457-72-5, 29081-56-9, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7, 91036-71-4, 4021-47-0 and others.
8. 全氟辛酸及其鹽類包含等物質 (PFOA and its salts including)：
   CAS No.: 335-67-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0, 3825-26-1 and others.
9. ▲：MDL是針對元素/測試化合物之評估。(The MDL was evaluated for element / tested substance.)
   換算公式 (Conversion Formula)：AX = A × F

AX	A	F
氧化雙三丁基錫 (Bis(tributyltin)oxide) (TBTO)	三丁基錫 (Tributyl Tin) (TBT)	1.0276

   參數換算表 (Parameter Conversion Table)：
   https://eecloud.sgs.com/Region_TW/DocDownload.aspx?name=Others
10. 本報告為 ETR23800275 之異動報告。(This is the additional test report of ETR23800275.)

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PAHs Remark：

Δ 德國產品安全委員會(AfPS): GS PAHs 要求

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

項目 (Parameter)	第 1 類(Category 1)	第 2 類(Category 2)		第 3 類(Category 3)	
	意圖放入口中的材料或者長時間接觸皮膚(超過 30 秒)的 2009/48/EC 定義的玩具材料和 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 for children up to 3 years of age with intended long-term skin contact (> 30 seconds))	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(Materials that are not in Category 1, with intended or foreseeable long-term skin contact (> 30 seconds) or short-term repetitive contact with the skin)		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))	
		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 Fluoranthene Pyrene	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
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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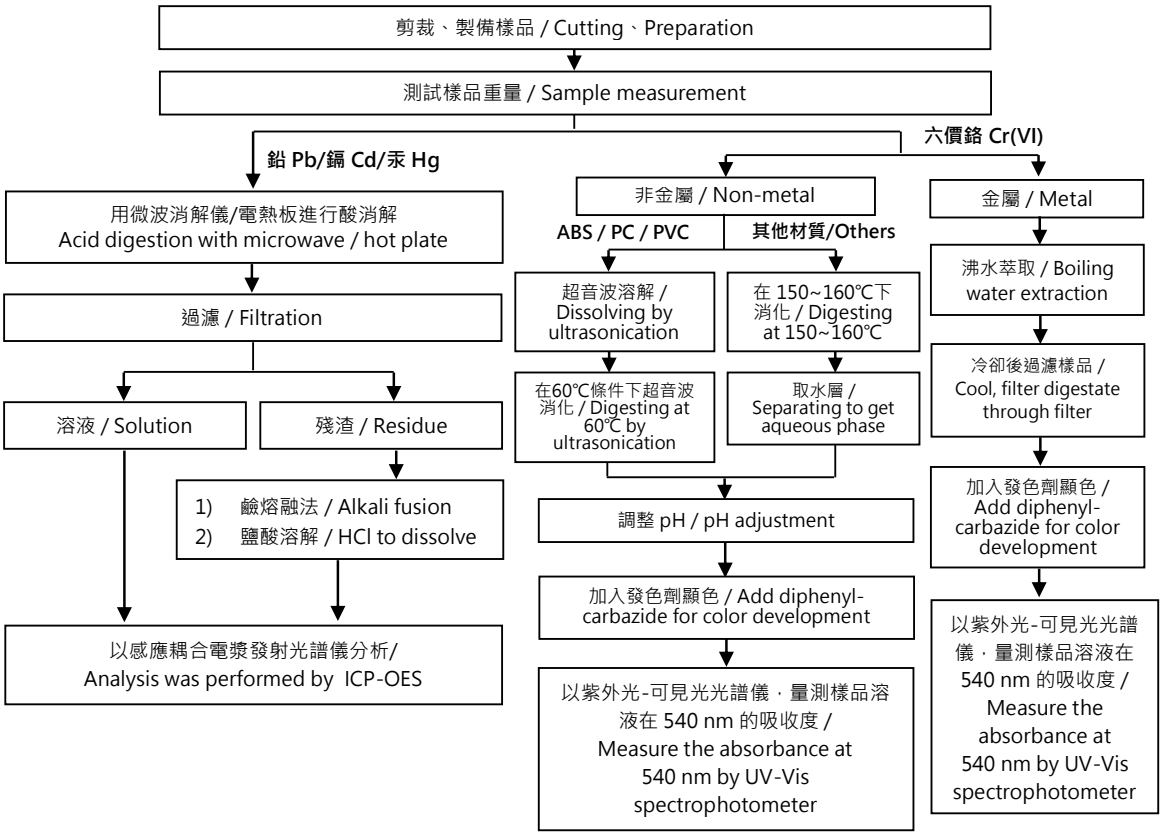
重金屬流程圖 / Analytical flow chart of heavy metal

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）



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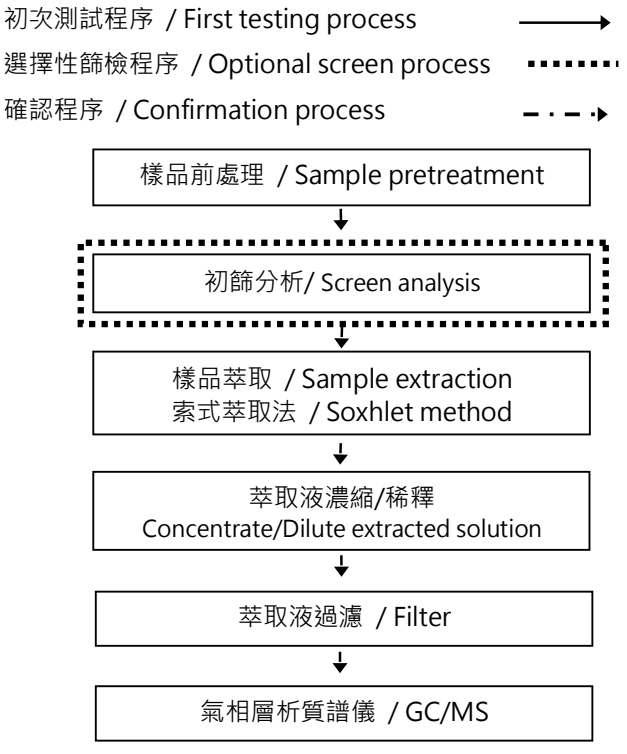
多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs



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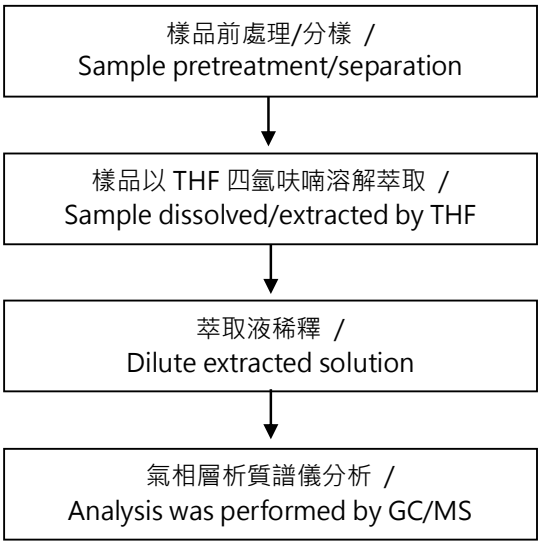
可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】



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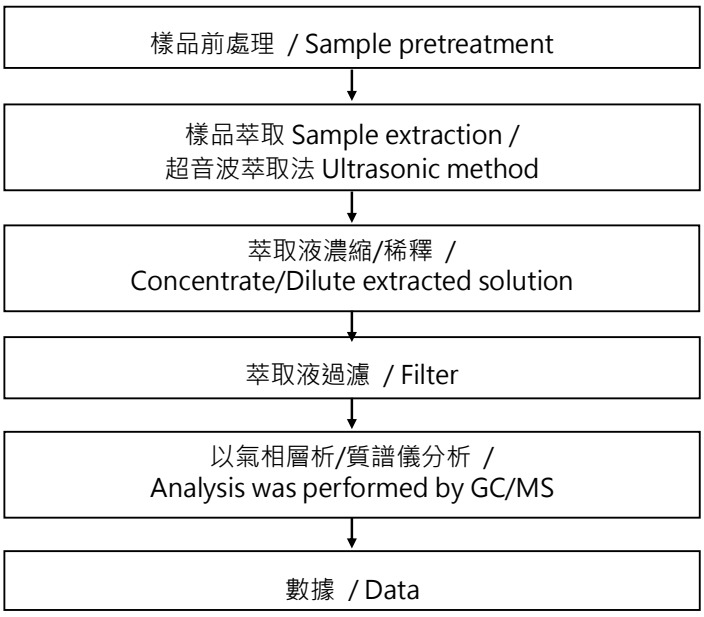
六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD



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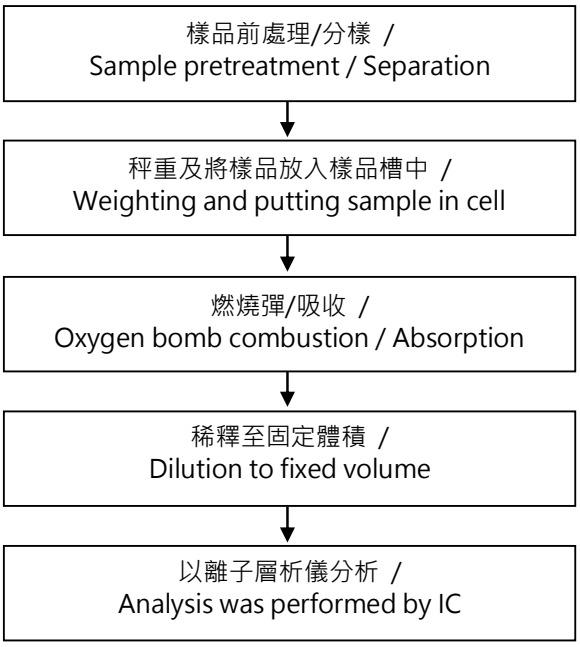
鹵素分析流程圖 / Analytical flow chart - Halogen



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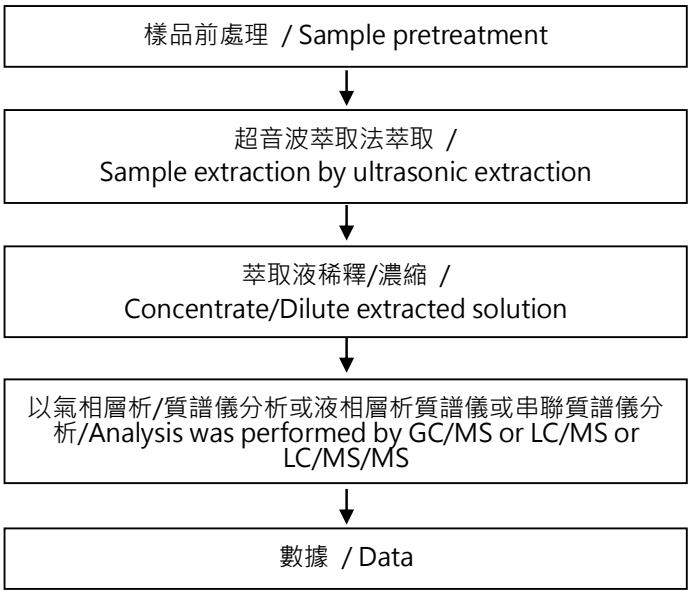
全氟化合物(包含全氟辛酸/全氟辛烷磺酸/其相關化合物等等)分析流程圖 / Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



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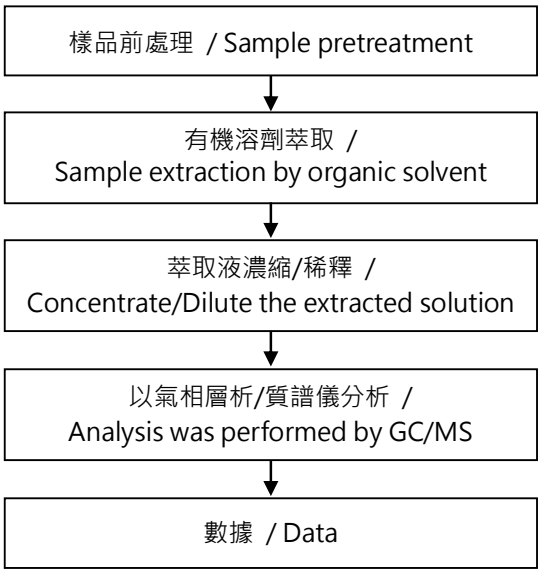
分析流程圖 / Analytical flow chart

【適用於：多氯聯苯、多氯奈、多氯三聯苯、滅蟻靈、氯化石蠟、DBBT】

*Apply to: PCBs, PCNs, PCTs, Mirex, Chlorinated Paraffins, DBBT



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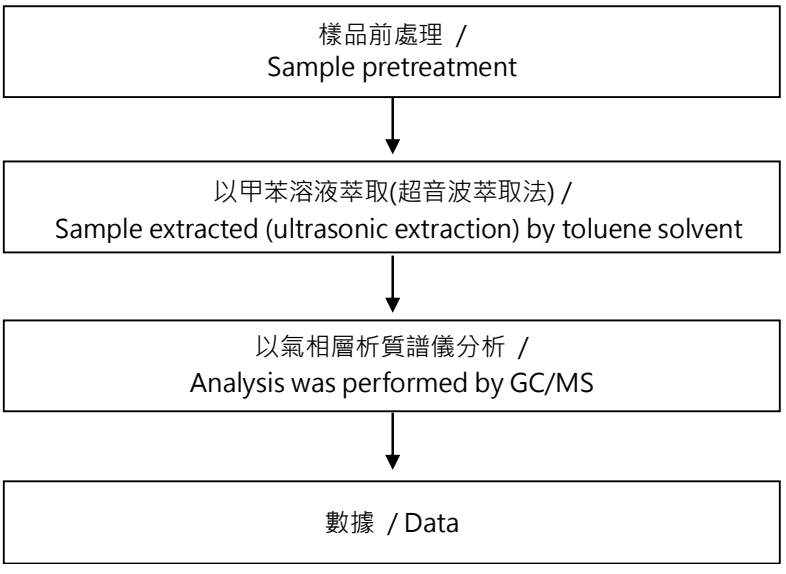
多環芳香烴分析流程圖 /
Analytical flow chart - PAHs (Polycyclic Aromatic Hydrocarbons)



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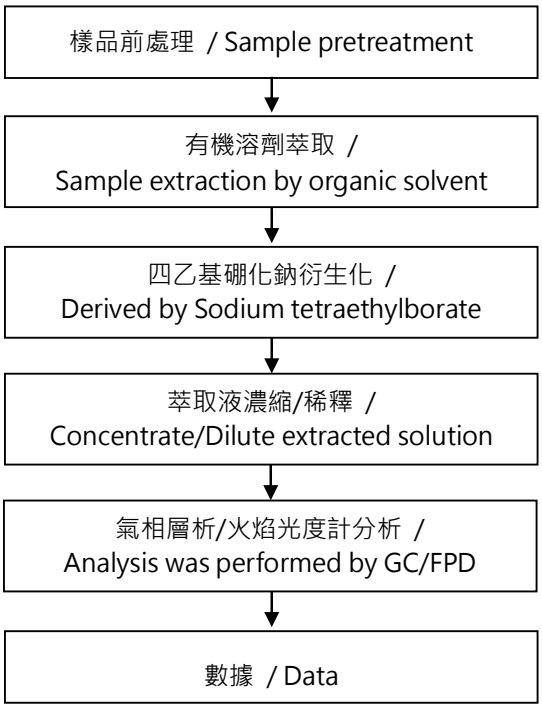
有機錫分析流程圖 / Analytical flow chart - Organic-Tin



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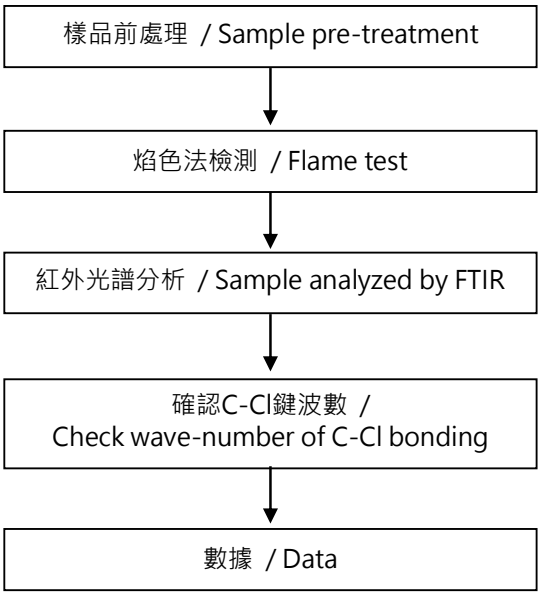
聚氯乙烯物質判定分析流程圖 / Analysis flow chart - PVC



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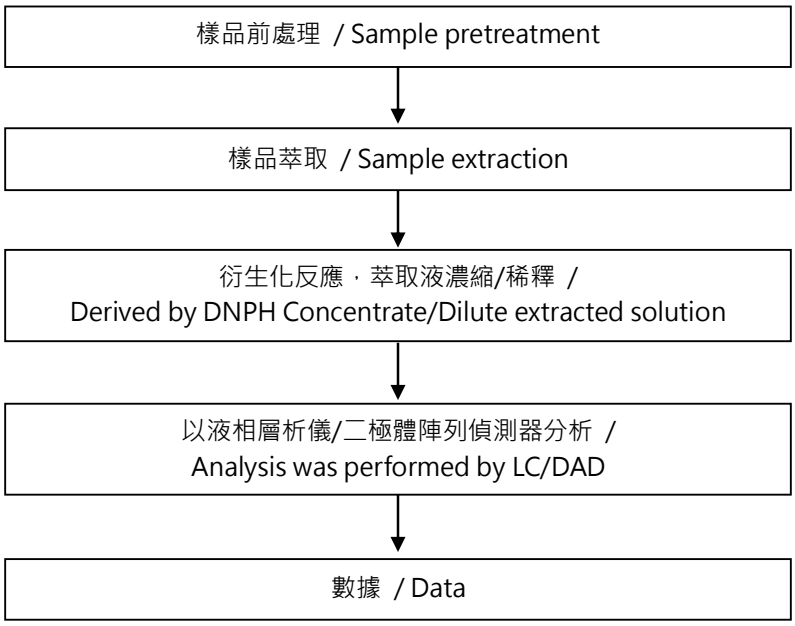
甲醛分析流程圖 / Analytical flow chart - Formaldehyde



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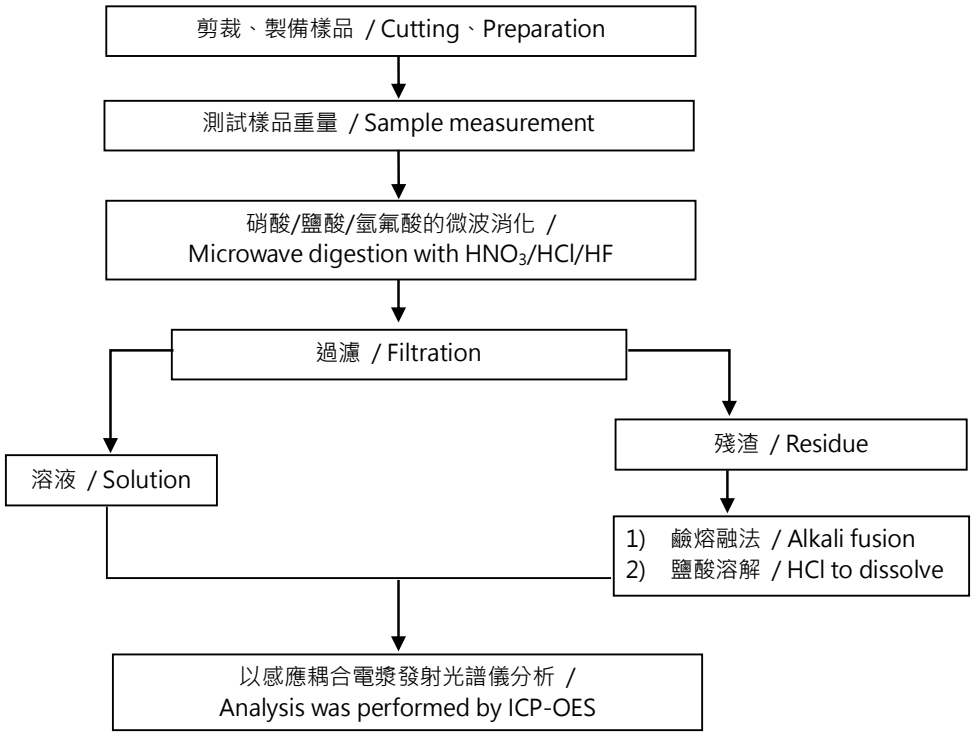
元素(含重金屬)分析流程圖 / Analytical flow chart of elements (Heavy metal included)

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.

【參考方法/Reference method：US EPA 3051A、US EPA 3052】



* US EPA 3051A 方法未添加氫氟酸 / US EPA 3051A method does not add HF.

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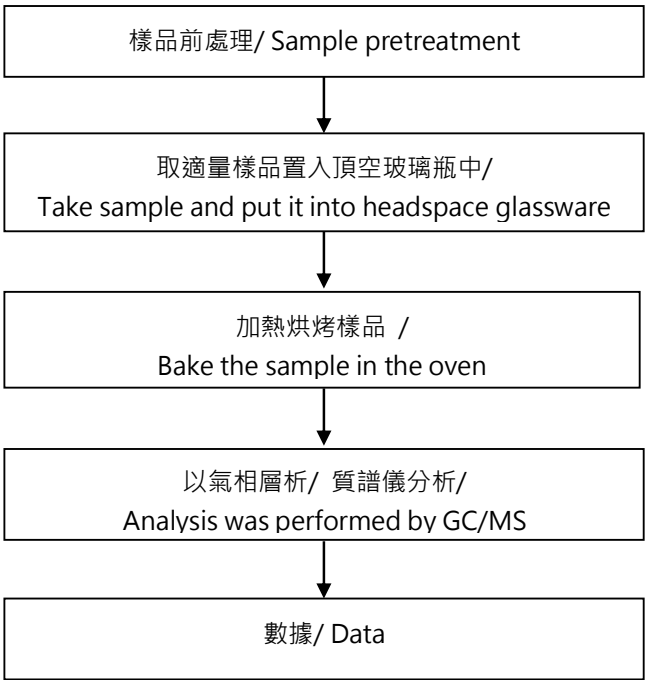
揮發性有機化合物分析流程圖/
Analytical flow chart of volatile organic compounds (VOCs)

【參考方法/ Reference method：US EPA 5021A】



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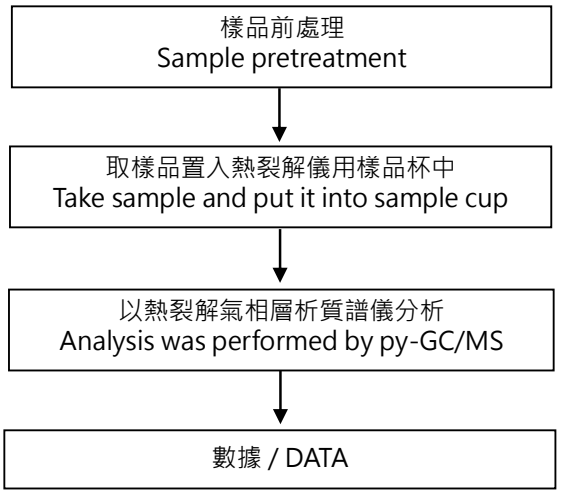
紅磷分析流程 / Analytical flow chart - Red phosphorus



測試報告
Test Report

號碼(No.): ETR23800275M05　　日期(Date): 09-Aug-2023　　

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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.)

ETR23800275

** 報告結尾 (End of Report) **

Test Report

No.: CANEC23014107402 **Date:** Nov 20, 2023

Client Name: 3M MATERIAL TECHNOLOGY (GUANGZHOU) CO.,LTD.

Client Address: NO.9,NANXIANG 2 ROAD,SCIENCE CITY GUANGZHOU HIGH TECH INDUSTRY DEVELOPMENT DISTRICT

Sample Name: 3M 9888T Tissue Tape

Model No.: 9888T

Client Ref. Information: 9810T, 9183T, 6408

The above sample(s) and information were provided by the client.

SGS Job No.: GZP23-019307

Sample Receiving Date: Nov 15, 2023

Testing Period: Nov 15, 2023 ~ Nov 20, 2023

Test Requested: Select test(s) as requested by the client.

Test Method(s): Please refer to next page(s).

Test Result(s): Please refer to next page(s).

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Coral Qiu

Coral Qiu
Approved Signatory

scan to see the report
AC1C4427

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch
No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663
t (86-20) 82155555 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com

Test Result(s):

Test Part Description：

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	CAN23-0141074-0001.C001	Colorless transparent double-side adhesive sheet

Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%
(2) MDL = Method Detection Limit
(3) ND = Not Detected (< MDL)
(4) "-" = Not Regulated

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analysis was performed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A1
Cadmium(Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Polybromobiphenyl (PBBs)	1000	mg/kg	-	ND
Monobromobiphenyl (MonoBB)	-	mg/kg	5	ND
Dibromobiphenyl (DiBB)	-	mg/kg	5	ND
Tribromobiphenyl (TriBB)	-	mg/kg	5	ND
Tetrabromobiphenyl (TetraBB)	-	mg/kg	5	ND
Pentabromobiphenyl (PentaBB)	-	mg/kg	5	ND
Hexabromobiphenyl (HexaBB)	-	mg/kg	5	ND
Heptabromobiphenyl (HeptaBB)	-	mg/kg	5	ND
Octabromobiphenyl (OctaBB)	-	mg/kg	5	ND
Nonabromobiphenyl (NonaBB)	-	mg/kg	5	ND
Decabromobiphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether(PBDEs)	1000	mg/kg	-	ND
Monobromodiphenylether (MonoBDE)	-	mg/kg	5	ND
Dibromodiphenylether (DiBDE)	-	mg/kg	5	ND
Tribromodiphenylether (TriBDE)	-	mg/kg	5	ND
Tetrabromodiphenylether (TetraBDE)	-	mg/kg	5	ND
Pentabromodiphenylether (PentaBDE)	-	mg/kg	5	ND
Hexabromodiphenylether (HexaBDE)	-	mg/kg	5	ND
Heptabromodiphenylether (HeptaBDE)	-	mg/kg	5	ND
Octabromodiphenylether (OctaBDE)	-	mg/kg	5	ND
Nonabromodiphenylether (NonaBDE)	-	mg/kg	5	ND
Decabromodiphenylether (DecaBDE)	-	mg/kg	5	ND
Dibutyl Phthalate(DBP)	1000	mg/kg	50	ND

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Test Item(s)	Limit	Unit(s)	MDL	A1
Benzyl Butyl Phthalate(BBP)	1000	mg/kg	50	ND
Bis-(2-ethylhexyl) Phthalate(DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate(DIBP)	1000	mg/kg	50	ND

Notes:

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

(2) IEC 62321 series is equivalent to EN 62321 series.

(3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (*w*=0) stated in ILAC-G8:09/2019.

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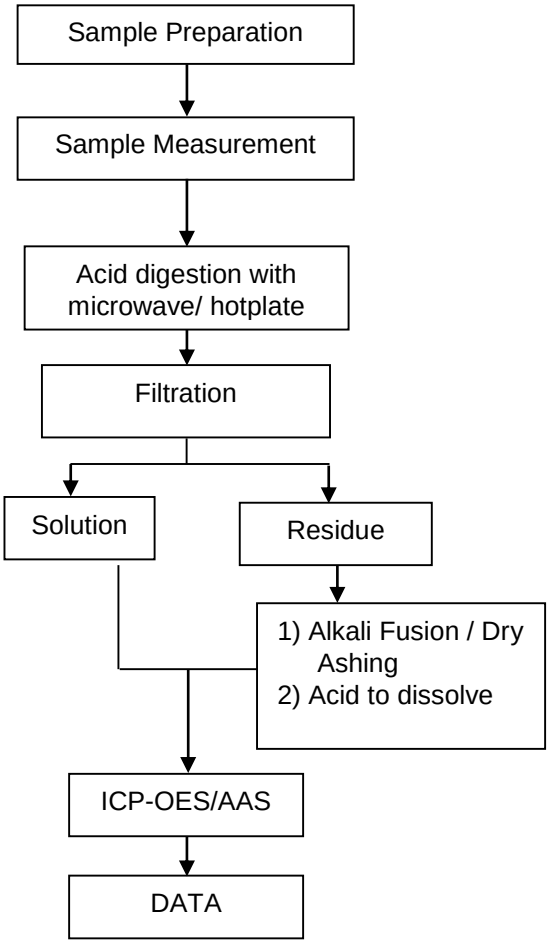
ATTACHMENTS

Elements Testing Flow Chart

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



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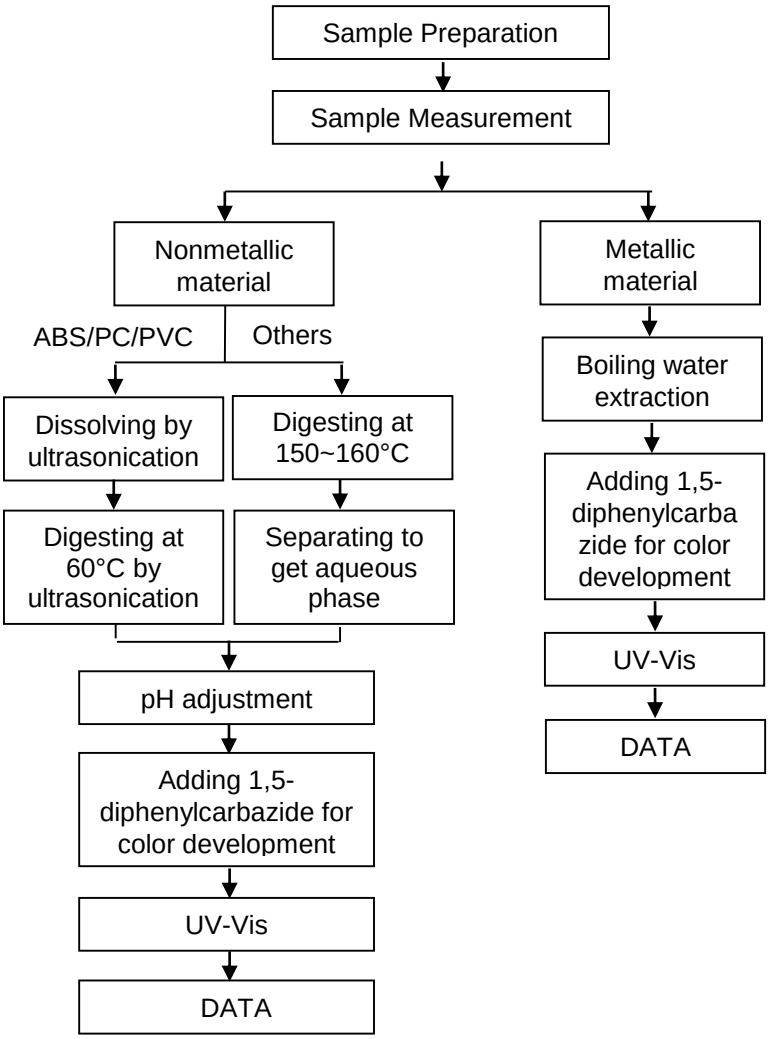
ATTACHMENTS

Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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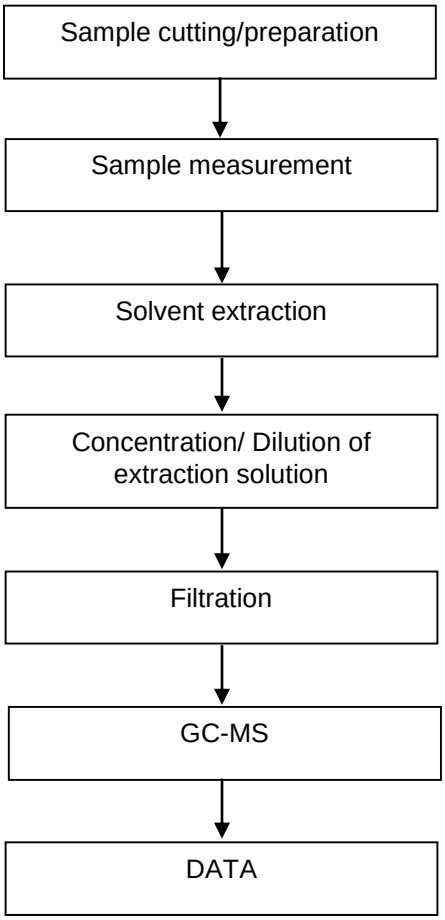
ATTACHMENTS

PBBs/PBDEs Testing Flow Chart



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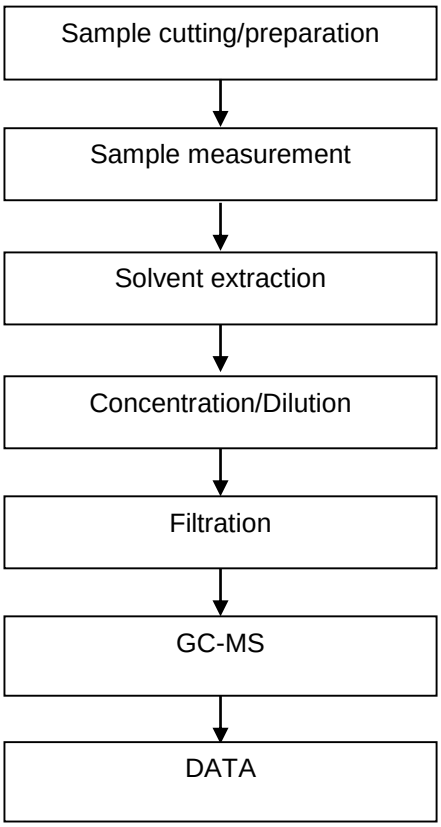
ATTACHMENTS

Phthalates Testing Flow Chart



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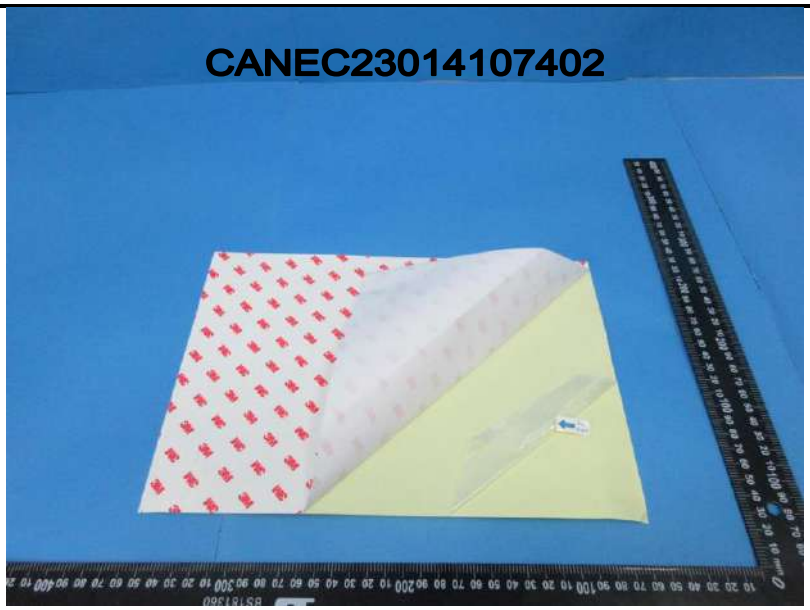
中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 sgs.china@sgs.com

Sample Photo:



CAN23-0141074-0001.C001

SGS authenticate the photo on original report only

*** End of Report ***

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch
No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663
t (86-20) 82155555 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com

Test Report

No.: ETR23801103 Date: 10-Aug-2023

I-PEX INC.
1-33-10 MORINO, MACHIDA-CITY, TOKYO 194-0022,JAPAN

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

Sample Submitted By	:	I-PEX INC.
Sample Name	:	PLASTIC (1844-013-01)
Style/Item No.	:	DURANEX 310NF

==========

Sample Receiving Date	:	04-Aug-2023
Testing Period	:	04-Aug-2023 to 10-Aug-2023

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.

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

CHECK REPORT
PIN CODE: EC977492

I-PEX INC.
1-33-10 MORINO, MACHIDA-CITY, TOKYO 194-0022,JAPAN

Test Part Description

No.1 : WHITE PLASTIC PELLETS

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Cadmium (Cd)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.	100
Lead (Pb)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.	1000
Mercury (Hg)	With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.	mg/kg	2	n.d.	1000
Hexavalent Chromium Cr(VI)	With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.	mg/kg	8	n.d.	1000
Monobromobiphenyl	With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.	mg/kg	5	n.d.	-
Dibromobiphenyl		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		mg/kg	-	n.d.	1000
Monobromodiphenyl ether		mg/kg	5	n.d.	-
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

I-PEX INC.
1-33-10 MORINO, MACHIDA-CITY, TOKYO 194-0022,JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Butyl benzyl phthalate (BBP)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Dibutyl phthalate (DBP)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Di-(2-ethylhexyl) phthalate (DEHP)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Diisobutyl phthalate (DIBP)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Chlorine (Cl) (CAS No.: 22537-15-1)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.	-
Bromine (Br) (CAS No.: 10097-32-2)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.	-
Fluorine (F) (CAS No.: 14762-94-8)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	634	-
Phosphorus (P) (CAS No.: 7723-14-0)	With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.	mg/kg	2	29400	-

Note：

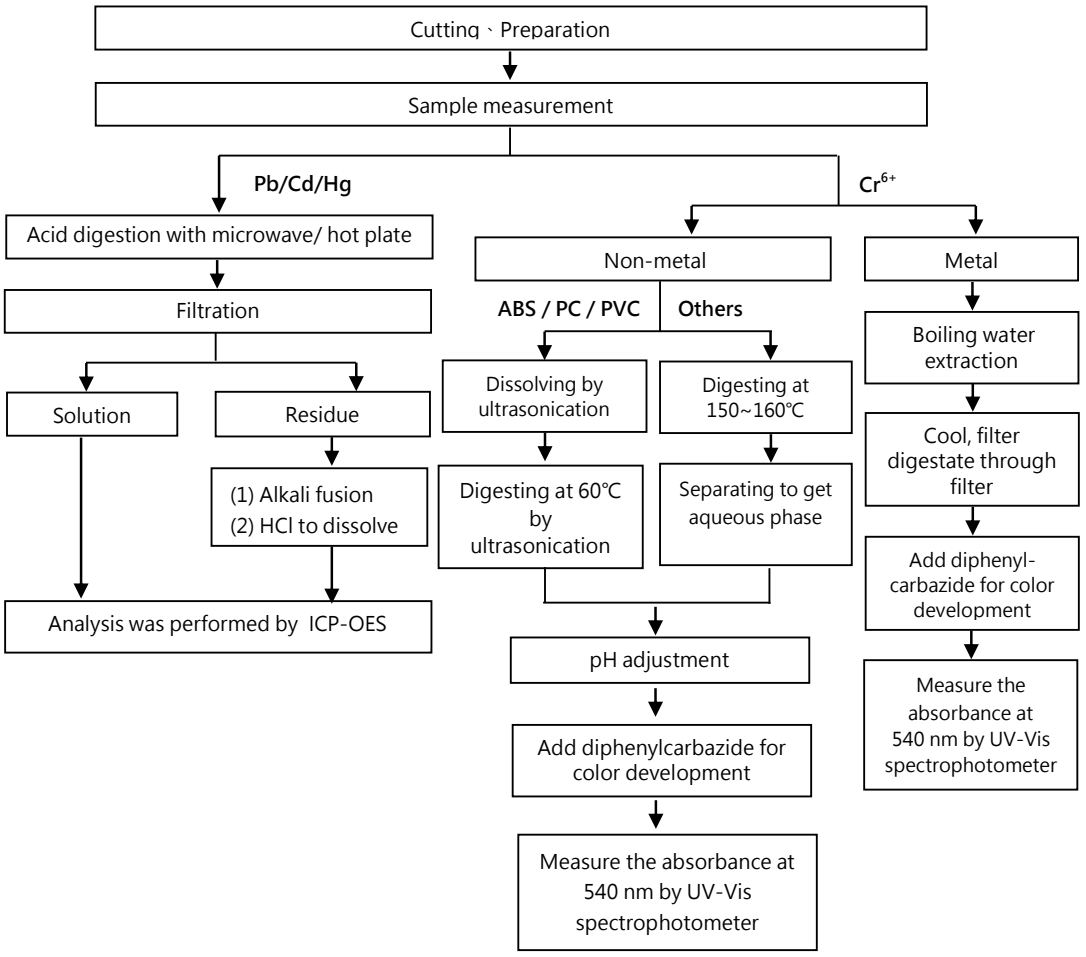
1. mg/kg = ppm ; 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)
4. "-" = Not Regulated
5. Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.

I-PEX INC.
1-33-10 MORINO, MACHIDA-CITY, TOKYO 194-0022,JAPAN

Analytical flow chart of heavy metal

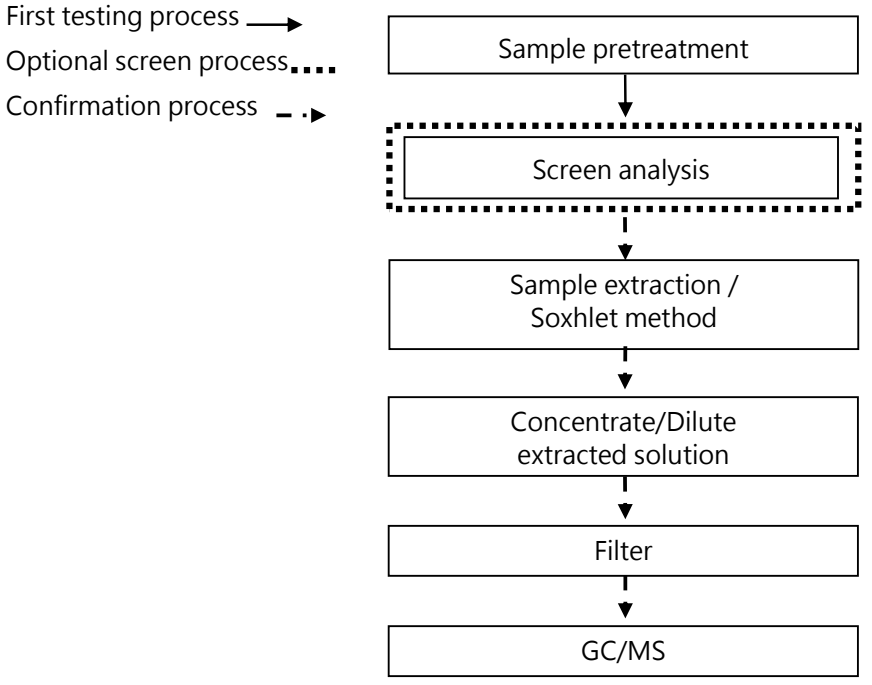
These samples were dissolved totally by pre-conditioning method according to below flow chart.

(Cr^{6+} test method excluded)



I-PEX INC.
1-33-10 MORINO, MACHIDA-CITY, TOKYO 194-0022,JAPAN

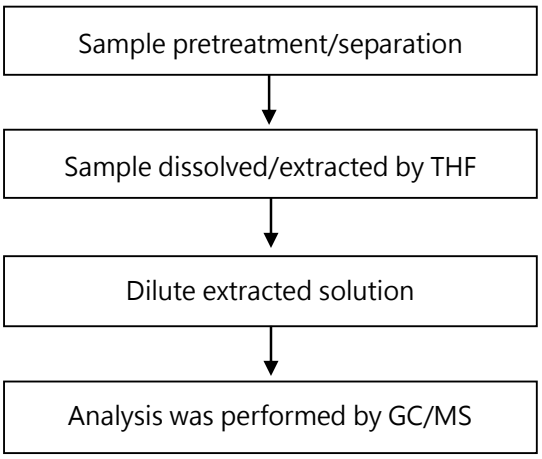
Analytical flow chart – PBBs / PBDEs



I-PEX INC.
1-33-10 MORINO, MACHIDA-CITY, TOKYO 194-0022,JAPAN

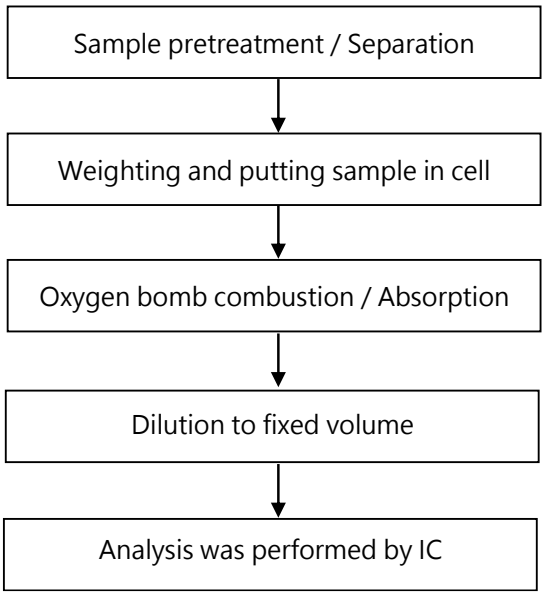
Analytical flow chart - Phthalate

【Test method: IEC 62321-8】



I-PEX INC.
1-33-10 MORINO, MACHIDA-CITY, TOKYO 194-0022,JAPAN

Analytical flow chart - Halogen

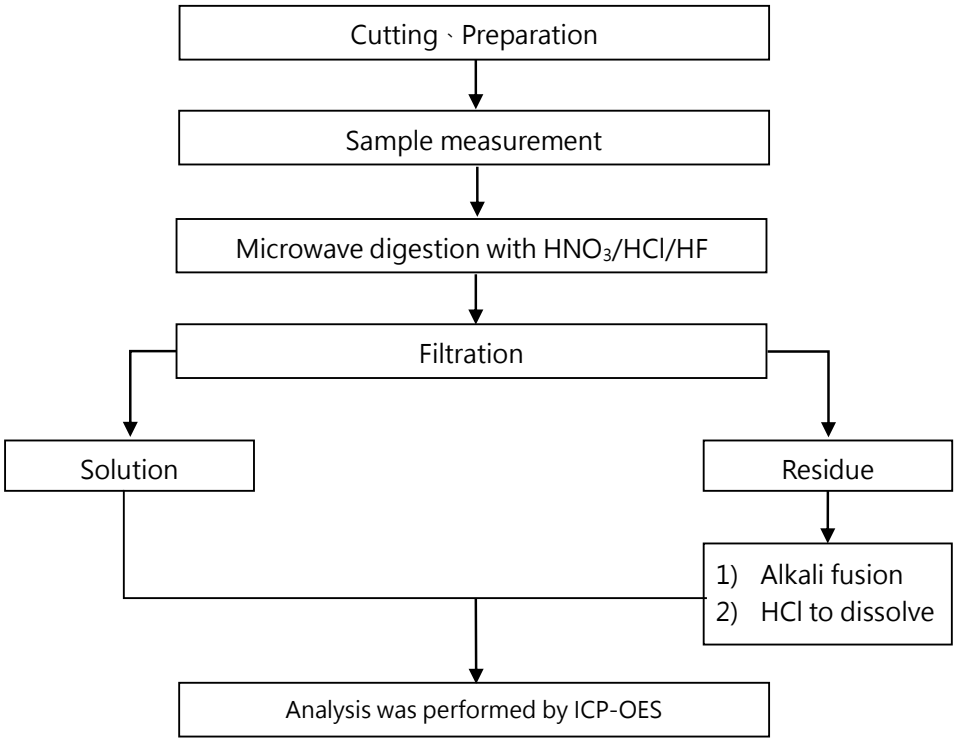


I-PEX INC.
1-33-10 MORINO, MACHIDA-CITY, TOKYO 194-0022,JAPAN

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.

I-PEX INC.
1-33-10 MORINO, MACHIDA-CITY, TOKYO 194-0022,JAPAN

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

ETR23801103

** End of Report **

Test Report

No.: ETR23803657M01 Date: 31-Aug-2023

JX METALS CORPORATION
3 KURAMI, SAMUKAWA, KOZA, KANAGAWA 253-0101, JAPAN

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

Sample Submitted By	:	JX METALS CORPORATION
Sample Name	:	COPPER ALLOY
Style/Item No.	:	C5210

==========

Sample Receiving Date	:	16-Aug-2023
Testing Period	:	16-Aug-2023 to 31-Aug-2023

Test Requested : As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI) contents in the submitted sample(s).

Test Results : Please refer to following pages.

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

CHECK REPORT
PIN CODE: EC27944E

JX METALS CORPORATION
3 KURAMI, SAMUKAWA, KOZA, KANAGAWA 253-0101, JAPAN

Test Part Description

No.1 : COPPER COLORED METAL

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result
				No.1
Cadmium (Cd)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.
Lead (Pb)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	21.6
Mercury (Hg)	With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.	mg/kg	2	n.d.
Hexavalent Chromium Cr(VI) (#2)	With reference to IEC 62321-7-1: 2015, analysis was performed by UV-VIS.	μg/cm²	0.1	n.d.

Note :

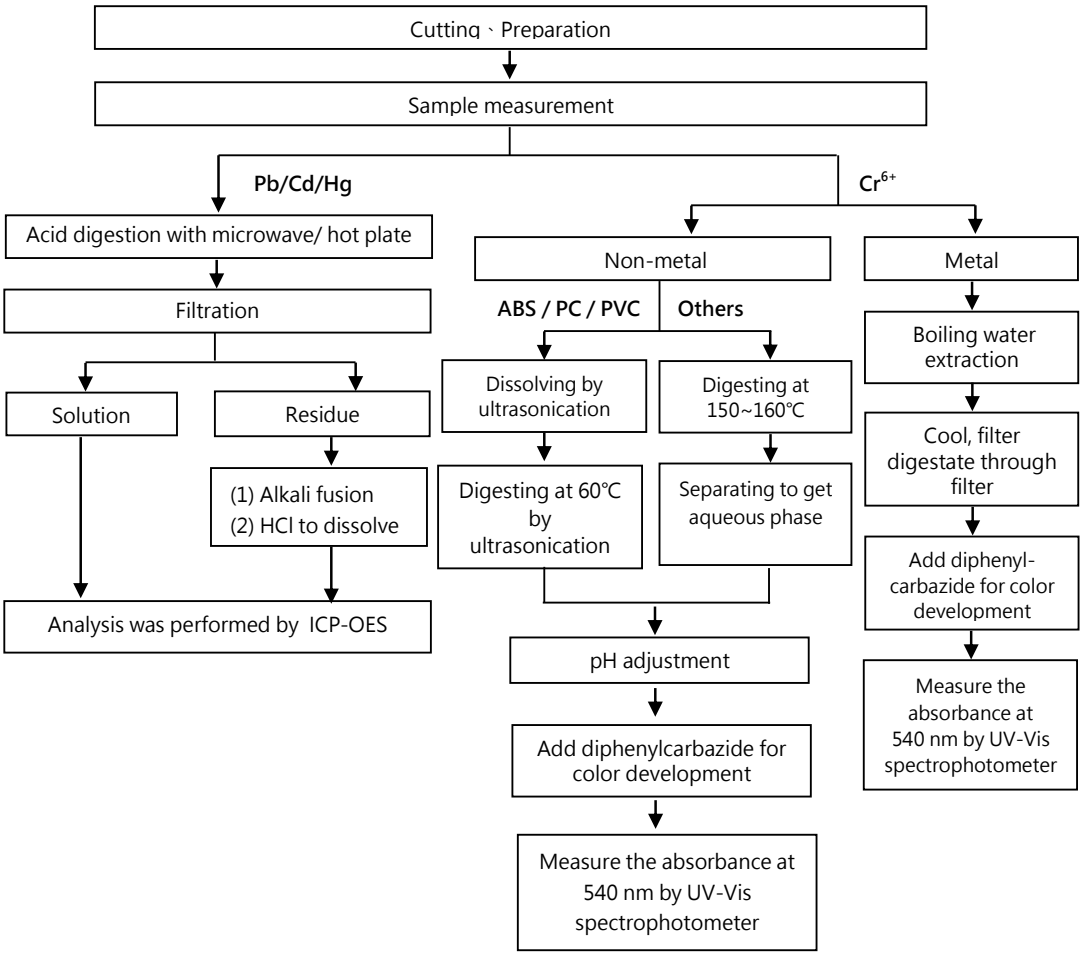
1. mg/kg = ppm ; 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)
4. (#2) =
   a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 μg/cm². The sample coating is considered to contain Cr(VI).
   b. The sample is negative for 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. The result between 0.10 μg/cm² and 0.13 μg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.
5. This is the additional test report of ETR23803657.

JX METALS CORPORATION
3 KURAMI, SAMUKAWA, KOZA, KANAGAWA 253-0101, JAPAN

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)



JX METALS CORPORATION
3 KURAMI, SAMUKAWA, KOZA, KANAGAWA 253-0101, JAPAN

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

ETR23803657

** End of Report **

Test Report

No.: ETR23803656M01 Date: 31-Aug-2023

JX METALS CORPORATION
3 KURAMI, SAMUKAWA, KOZA, KANAGAWA 253-0101, JAPAN

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

Sample Submitted By	:	JX METALS CORPORATION
Sample Name	:	COPPER ALLOY
Style/Item No.	:	C5191

==========

Sample Receiving Date	:	16-Aug-2023
Testing Period	:	16-Aug-2023 to 31-Aug-2023

Test Requested : As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI) contents in the submitted sample(s).

Test Results : Please refer to following pages.

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

CHECK REPORT
PIN CODE: 57D64493

JX METALS CORPORATION
3 KURAMI, SAMUKAWA, KOZA, KANAGAWA 253-0101, JAPAN

Test Part Description

No.1 : COPPER COLORED METAL

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result
				No.1
Cadmium (Cd)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.
Lead (Pb)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	16.5
Mercury (Hg)	With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.	mg/kg	2	n.d.
Hexavalent Chromium Cr(VI) (#2)	With reference to IEC 62321-7-1: 2015, analysis was performed by UV-VIS.	μg/cm²	0.1	n.d.

Note :

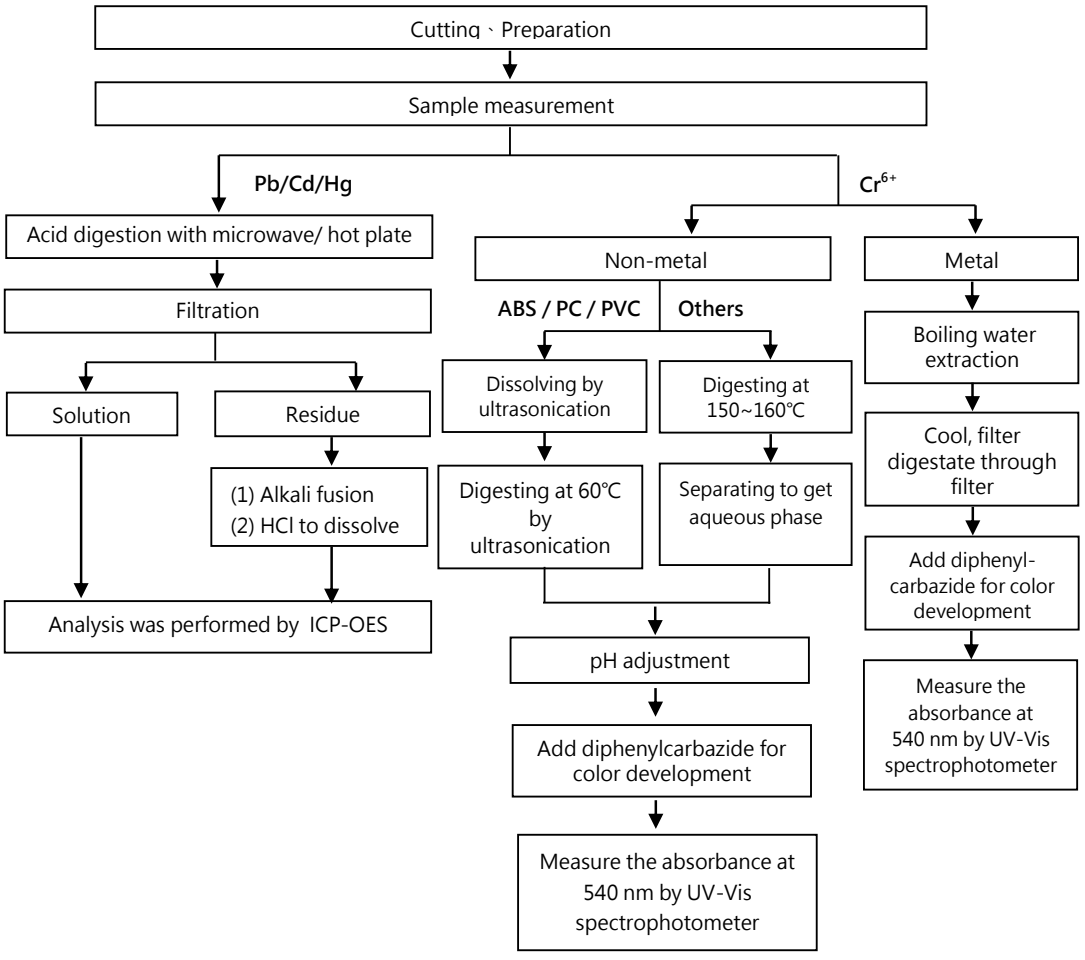
1. mg/kg = ppm ; 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)
4. (#2) =
   a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 μg/cm². The sample coating is considered to contain Cr(VI).
   b. The sample is negative for 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. The result between 0.10 μg/cm² and 0.13 μg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.
5. This is the additional test report of ETR23803656.

JX METALS CORPORATION
3 KURAMI, SAMUKAWA, KOZA, KANAGAWA 253-0101, JAPAN

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)



JX METALS CORPORATION
3 KURAMI, SAMUKAWA, KOZA, KANAGAWA 253-0101, JAPAN

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

ETR23803656

** End of Report **

Test Report 測試報告

Number 報告號碼 : TWNC01231369

Applicant: 申請廠商
WONDERFUL HI-TECH CO., LTD.
萬泰科技股份有限公司
No.17, Beiyuan Rd., Zhongli Dist.,
Taoyuan City 320, Taiwan (R.O.C.)
桃園市中壢區工業區北園路 17 號

Issue Date 報告發行日期 : Jan 12, 2024

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 Submitted By 送樣廠商	:	WONDERFUL HI-TECH CO., LTD. 萬泰科技股份有限公司
Sample Description 樣品名稱	:	RF COAXIAL CABLE RG-6U,RG-59,RG-11,RG-58A/U, RG-142/U, RG-178 B/U, RG-179/U, RG-316U, MINI 0.8mm, 0.98mm, 1.13mm, 1.27mm, 1.32mm, 1.37mm, 1.48mm, 1.13LL, 1.37LL, RF405A, UL 1330, 1331, 1332, 1333, 1726, 1727, 1867, 1979, 10231, 10064, 10362
Style / Item No. 產品型號	:	BLACK, BROWN, RED, ORANGE, YELLOW, GREEN, BLUE, PURPLE, GRAY, WHITE
Date Sample Received 收件日期	:	Dec 13, 2023
Date Test Started 開始測試日期	:	Dec 13, 2023

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:

Please see page two.
請見第二頁。

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

Intertek Testing Services Taiwan Ltd.
全國公證檢驗股份有限公司
8F., No. 423, Ruiguang Rd., Neihu District,
Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Test Report 測試報告

Number : TWNC01231369
報告號碼

Conclusion 結論:

Tested Sample 測試樣品	Standard 標準	Result 結果
Test Components of Submitted Samples 測試部位	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	Pass 合格
	As per applicant's request 依據客戶要求	
	– Antimony (Sb) Content 銻含量	See Test Conducted 請見測試內容
	– Phthalates Content 可塑劑含量	See Test Conducted 請見測試內容
	– Halogen Content 鹵素含量	See Test Conducted 請見測試內容
	– Perfluorooctane Sulfonates (PFOS) Content 全氟辛磺酸含量	See Test Conducted 請見測試內容
	– Perfluorooctanoic Acid (PFOA) Content 全氟辛酸含量	See Test Conducted 請見測試內容

Tested Components 測試元件:

(1) Black plastic pellets
(2) Brown plastic pellets
(3) Red plastic pellets
(4) Orange plastic pellets
(5) Yellow plastic pellets
(6) Green plastic pellets
(7) Blue plastic pellets
(8) Purple plastic pellets
(9) Grey plastic pellets
(10) White plastic pellets

Authorized By:
On behalf of Intertek Testing Services Taiwan Limited

Matt Wang
General Manager

Signed by:

Thomas Chou
Manager

Intertek Testing Services Taiwan Ltd.
全國公證檢驗股份有限公司
8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Test Conducted 測試內容：

Test Result Summary 測試結果：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (1)	Result 結果 (2)	Result 結果 (3)	RL
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. 參考 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	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. 參考 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	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. 參考 IEC 62321-4:2013+AMD 1:2017，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	ND	2
Antimony (Sb) Content 銻含量	ppm	With reference to USEPA 3052, by microwave digestion and determined by ICP-OES. 參考 USEPA 3052，以微波消化法並用感應耦合電漿原子發射光譜儀分析。	ND	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. 參考 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	ND	8

Intertek Testing Services Taiwan Ltd.
全國公證檢驗股份有限公司
8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (1)	Result 結果 (2)	Result 結果 (3)	RL
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. 參考 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	ND	5
Dibrominated Biphenyls (DiBB) 二溴聯苯	ppm		ND	ND	ND	5
Tribrominated Biphenyls (TriBB) 三溴聯苯	ppm		ND	ND	ND	5
Tetrabrominated Biphenyls (TetraBB) 四溴聯苯	ppm		ND	ND	ND	5
Pentabrominated Biphenyls (PentaBB) 五溴聯苯	ppm		ND	ND	ND	5
Hexabrominated Biphenyls (HexaBB) 六溴聯苯	ppm		ND	ND	ND	5
Heptabrominated Biphenyls (HeptaBB) 七溴聯苯	ppm		ND	ND	ND	5
Octabrominated Biphenyls (OctaBB) 八溴聯苯	ppm		ND	ND	ND	5
Nonabrominated Biphenyls (NonaBB) 九溴聯苯	ppm		ND	ND	ND	5
Decabrominated Biphenyl (DecaBB) 十溴聯苯	ppm		ND	ND	ND	5
Polybrominated Diphenyl Ethers (PBDEs) 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. 參考 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	ND	5
Dibrominated Diphenyl Ethers (DiBDE) 二溴聯苯醚	ppm		ND	ND	ND	5
Tribrominated Diphenyl Ethers (TriBDE) 三溴聯苯醚	ppm		ND	ND	ND	5
Tetrabrominated Diphenyl Ethers (TetraBDE) 四溴聯苯醚	ppm		ND	ND	ND	5
Pentabrominated Diphenyl Ethers (PentaBDE) 五溴聯苯醚	ppm		ND	ND	ND	5
Hexabrominated Diphenyl Ethers (HexaBDE) 六溴聯苯醚	ppm		ND	ND	ND	5
Heptabrominated Diphenyl Ethers (HeptaBDE) 七溴聯苯醚	ppm		ND	ND	ND	5
Octabrominated Diphenyl Ethers (OctaBDE) 八溴聯苯醚	ppm		ND	ND	ND	5
Nonabrominated Diphenyl Ethers (NonaBDE) 九溴聯苯醚	ppm		ND	ND	ND	5
Decabrominated Diphenyl Ether (DecaBDE) 十溴聯苯醚	ppm		ND	ND	ND	5

Intertek Testing Services Taiwan Ltd.
全國公證檢驗股份有限公司
8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (1)	Result 結果 (2)	Result 結果 (3)	RL
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 62321-8:2017, by solvent extraction and determined by GC-MS. 參考 IEC 62321-8:2017，以溶劑萃取並用氣相層析質譜儀分析。	ND	ND	ND	50
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	ppm		ND	ND	ND	50
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	ppm		ND	ND	ND	50
Di-(Iso-Nonyl) Phthalate (DINP) 鄰苯二甲酸二異壬酯	ppm		ND	ND	ND	50
Di-(Iso-Decyl) Phthalate (DIDP) 鄰苯二甲酸二異癸酯	ppm		ND	ND	ND	50
Di-(N-Octyl) Phthalate (DNOP) 鄰苯二甲酸二辛酯	ppm		ND	ND	ND	50
Di-n-hexyl Phthalate (DNHP) 鄰苯二甲酸二正己酯	ppm		ND	ND	ND	50
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	ppm		ND	ND	ND	50
Halogen Content 鹵素含量						
Fluorine (F) 氟	ppm	With reference to EN 14582:2016 by combustion bomb with oxygen and determined by Ion Chromatography. 參考 EN 14582:2016，以氧彈燃燒集氣法並用離子層析儀分析。	541750	534748	520948	50
Chlorine (Cl) 氯	ppm		ND	ND	ND	50
Bromine (Br) 溴	ppm		ND	ND	ND	50
Iodine (I) 碘	ppm		ND	ND	ND	50
Others 其他						
Perfluorooctane Sulfonates Including PFOS, PFOSA, N-Me-FOSA, N-Et-FOSA, N-Me-FOSE, N-Et-FOSE 全氟辛磺酸含 PFOS, PFOSA, N-Me-FOSA, N-Et-FOSA, N-Me-FOSE, N-Et-FOSE	ppm	With reference to CEN/TS 15968:2010, by solvent extraction and determined by LC-MS-MS. 參考 CEN/TS 15968:2010，以溶劑萃取並用液相層析串聯質譜儀分析。	ND	ND	ND	0.01
Perfluorooctanoic Acid (PFOA) 全氟辛酸	ppm	With reference to CEN/TS 15968:2010, by solvent extraction and determined by LC-MS-MS. 參考 CEN/TS 15968:2010，以溶劑萃取並用液相層析串聯質譜儀分析。	ND	ND	ND	0.01

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114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (4)	Result 結果 (5)	Result 結果 (6)	RL
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. 參考 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	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. 參考 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	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. 參考 IEC 62321-4:2013+AMD 1:2017，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	ND	2
Antimony (Sb) Content 銻含量	ppm	With reference to USEPA 3052, by microwave digestion and determined by ICP-OES. 參考 USEPA 3052，以微波消化法並用感應耦合電漿原子發射光譜儀分析。	ND	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. 參考 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	ND	8

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Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (4)	Result 結果 (5)	Result 結果 (6)	RL
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. 參考 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	ND	5
Dibrominated Biphenyls (DiBB) 二溴聯苯	ppm		ND	ND	ND	5
Tribrominated Biphenyls (TriBB) 三溴聯苯	ppm		ND	ND	ND	5
Tetrabrominated Biphenyls (TetraBB) 四溴聯苯	ppm		ND	ND	ND	5
Pentabrominated Biphenyls (PentaBB) 五溴聯苯	ppm		ND	ND	ND	5
Hexabrominated Biphenyls (HexaBB) 六溴聯苯	ppm		ND	ND	ND	5
Heptabrominated Biphenyls (HeptaBB) 七溴聯苯	ppm		ND	ND	ND	5
Octabrominated Biphenyls (OctaBB) 八溴聯苯	ppm		ND	ND	ND	5
Nonabrominated Biphenyls (NonaBB) 九溴聯苯	ppm		ND	ND	ND	5
Decabrominated Biphenyl (DecaBB) 十溴聯苯	ppm		ND	ND	ND	5
Polybrominated Diphenyl Ethers (PBDEs) 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. 參考 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	ND	5
Dibrominated Diphenyl Ethers (DiBDE) 二溴聯苯醚	ppm		ND	ND	ND	5
Tribrominated Diphenyl Ethers (TriBDE) 三溴聯苯醚	ppm		ND	ND	ND	5
Tetrabrominated Diphenyl Ethers (TetraBDE) 四溴聯苯醚	ppm		ND	ND	ND	5
Pentabrominated Diphenyl Ethers (PentaBDE) 五溴聯苯醚	ppm		ND	ND	ND	5
Hexabrominated Diphenyl Ethers (HexaBDE) 六溴聯苯醚	ppm		ND	ND	ND	5
Heptabrominated Diphenyl Ethers (HeptaBDE) 七溴聯苯醚	ppm		ND	ND	ND	5
Octabrominated Diphenyl Ethers (OctaBDE) 八溴聯苯醚	ppm		ND	ND	ND	5
Nonabrominated Diphenyl Ethers (NonaBDE) 九溴聯苯醚	ppm		ND	ND	ND	5
Decabrominated Diphenyl Ether (DecaBDE) 十溴聯苯醚	ppm		ND	ND	ND	5

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114690 台北市內湖區瑞光路 423 號 8 樓
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Fax: (+886-2) 6602-2420
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Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (4)	Result 結果 (5)	Result 結果 (6)	RL
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 62321-8:2017, by solvent extraction and determined by GC-MS. 參考 IEC 62321-8:2017，以溶劑萃取並用氣相層析質譜儀分析。	ND	ND	ND	50
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	ppm		ND	ND	ND	50
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	ppm		ND	ND	ND	50
Di-(Iso-Nonyl) Phthalate (DINP) 鄰苯二甲酸二異壬酯	ppm		ND	ND	ND	50
Di-(Iso-Decyl) Phthalate (DIDP) 鄰苯二甲酸二異癸酯	ppm		ND	ND	ND	50
Di-(N-Octyl) Phthalate (DNOP) 鄰苯二甲酸二辛酯	ppm		ND	ND	ND	50
Di-n-hexyl Phthalate (DNHP) 鄰苯二甲酸二正己酯	ppm		ND	ND	ND	50
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	ppm		ND	ND	ND	50
Halogen Content 鹵素含量						
Fluorine (F) 氟	ppm	With reference to EN 14582:2016 by combustion bomb with oxygen and determined by Ion Chromatography. 參考 EN 14582:2016，以氧彈燃燒集氣法並用離子層析儀分析。	508989	513312	434823	50
Chlorine (Cl) 氯	ppm		ND	ND	ND	50
Bromine (Br) 溴	ppm		ND	ND	ND	50
Iodine (I) 碘	ppm		ND	ND	ND	50
Others 其他						
Perfluorooctane Sulfonates Including PFOS, PFOSA, N-Me-FOSA, N-Et-FOSA, N-Me-FOSE, N-Et-FOSE 全氟辛磺酸含 PFOS, PFOSA, N-Me-FOSA, N-Et-FOSA, N-Me-FOSE, N-Et-FOSE	ppm	With reference to CEN/TS 15968:2010, by solvent extraction and determined by LC-MS-MS. 參考 CEN/TS 15968:2010，以溶劑萃取並用液相層析串聯質譜儀分析。	ND	ND	ND	0.01
Perfluorooctanoic Acid (PFOA) 全氟辛酸	ppm	With reference to CEN/TS 15968:2010, by solvent extraction and determined by LC-MS-MS. 參考 CEN/TS 15968:2010，以溶劑萃取並用液相層析串聯質譜儀分析。	ND	ND	ND	0.01

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8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (7)	Result 結果 (8)	RL
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. 參考 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. 參考 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. 參考 IEC 62321-4:2013+AMD 1:2017，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
Antimony (Sb) Content 銻含量	ppm	With reference to USEPA 3052, by microwave digestion and determined by ICP-OES. 參考 USEPA 3052，以微波消化法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. 參考 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 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (7)	Result 結果 (8)	RL
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. 參考 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 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		ND	ND	5
Heptabrominated Biphenyls (HeptaBB) 七溴聯苯	ppm		ND	ND	5
Octabrominated Biphenyls (OctaBB) 八溴聯苯	ppm		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
Polybrominated Diphenyl Ethers (PBDEs) 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. 參考 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 Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (7)	Result 結果 (8)	RL
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 62321-8:2017, by solvent extraction and determined by GC-MS. 參考 IEC 62321-8:2017，以溶劑萃取並用氣相層析質譜儀分析。	ND	ND	50
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	ppm		ND	ND	50
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	ppm		ND	ND	50
Di-(Iso-Nonyl) Phthalate (DINP) 鄰苯二甲酸二異壬酯	ppm		ND	ND	50
Di-(Iso-Decyl) Phthalate (DIDP) 鄰苯二甲酸二異癸酯	ppm		ND	ND	50
Di-(N-Octyl) Phthalate (DNOP) 鄰苯二甲酸二辛酯	ppm		ND	ND	50
Di-n-hexyl Phthalate (DNHP) 鄰苯二甲酸二正己酯	ppm		ND	ND	50
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	ppm		ND	ND	50
Halogen Content 鹵素含量					
Fluorine (F) 氟	ppm	With reference to EN 14582:2016 by combustion bomb with oxygen and determined by Ion Chromatography. 參考 EN 14582:2016，以氧彈燃燒集氣法並用離子層析儀分析。	508082	433764	50
Chlorine (Cl) 氯	ppm		ND	ND	50
Bromine (Br) 溴	ppm		ND	ND	50
Iodine (I) 碘	ppm		ND	ND	50
Others 其他					
Perfluorooctane Sulfonates Including PFOS, PFOSA, N-Me-FOSA, N-Et-FOSA, N-Me-FOSE, N-Et-FOSE 全氟辛磺酸含 PFOS, PFOSA, N-Me-FOSA, N-Et-FOSA, N-Me-FOSE, N-Et-FOSE	ppm	With reference to CEN/TS 15968:2010, by solvent extraction and determined by LC-MS-MS. 參考 CEN/TS 15968:2010，以溶劑萃取並用液相層析串聯質譜儀分析。	ND	ND	0.01
Perfluorooctanoic Acid (PFOA) 全氟辛酸	ppm	With reference to CEN/TS 15968:2010, by solvent extraction and determined by LC-MS-MS. 參考 CEN/TS 15968:2010，以溶劑萃取並用液相層析串聯質譜儀分析。	ND	ND	0.01

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Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (9)	Result 結果 (10)	RL
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. 參考 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. 參考 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. 參考 IEC 62321-4:2013+AMD 1:2017，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
Antimony (Sb) Content 銻含量	ppm	With reference to USEPA 3052, by microwave digestion and determined by ICP-OES. 參考 USEPA 3052，以微波消化法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. 參考 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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全國公證檢驗股份有限公司
8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Number : TWNC01231369
報告號碼

Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (9)	Result 結果 (10)	RL
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. 參考 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 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		ND	ND	5
Heptabrominated Biphenyls (HeptaBB) 七溴聯苯	ppm		ND	ND	5
Octabrominated Biphenyls (OctaBB) 八溴聯苯	ppm		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
Polybrominated Diphenyl Ethers (PBDEs) 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. 參考 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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114690 台北市內湖區瑞光路 423 號 8 樓
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Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (9)	Result 結果 (10)	RL
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 62321-8:2017, by solvent extraction and determined by GC-MS. 參考 IEC 62321-8:2017，以溶劑萃取並用氣相層析質譜儀分析。	ND	ND	50
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	ppm		ND	ND	50
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	ppm		ND	ND	50
Di-(Iso-Nonyl) Phthalate (DINP) 鄰苯二甲酸二異壬酯	ppm		ND	ND	50
Di-(Iso-Decyl) Phthalate (DIDP) 鄰苯二甲酸二異癸酯	ppm		ND	ND	50
Di-(N-Octyl) Phthalate (DNOP) 鄰苯二甲酸二辛酯	ppm		ND	ND	50
Di-n-hexyl Phthalate (DNHP) 鄰苯二甲酸二正己酯	ppm		ND	ND	50
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	ppm		ND	ND	50
Halogen Content 鹵素含量					
Fluorine (F) 氟	ppm	With reference to EN 14582:2016 by combustion bomb with oxygen and determined by Ion Chromatography. 參考 EN 14582:2016，以氧彈燃燒集氣法並用離子層析儀分析。	550579	490593	50
Chlorine (Cl) 氯	ppm		ND	ND	50
Bromine (Br) 溴	ppm		ND	ND	50
Iodine (I) 碘	ppm		ND	ND	50
Others 其他					
Perfluorooctane Sulfonates Including PFOS, PFOSA, N-Me-FOSA, N-Et-FOSA, N-Me-FOSE, N-Et-FOSE 全氟辛磺酸含 PFOS, PFOSA, N-Me-FOSA, N-Et-FOSA, N-Me-FOSE, N-Et-FOSE	ppm	With reference to CEN/TS 15968:2010, by solvent extraction and determined by LC-MS-MS. 參考 CEN/TS 15968:2010，以溶劑萃取並用液相層析串聯質譜儀分析。	ND	ND	0.01
Perfluorooctanoic Acid (PFOA) 全氟辛酸	ppm	With reference to CEN/TS 15968:2010, by solvent extraction and determined by LC-MS-MS. 參考 CEN/TS 15968:2010，以溶劑萃取並用液相層析串聯質譜儀分析。	ND	ND	0.01

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8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
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www.intertek-twn.com

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

Responsibility of Chemist 分析人員 : Cloud Hsu/ Vita Fu

Date Sample Received 樣品收件日期 : Dec 13, 2023
Test Period 樣品測試期間 : Dec 13, 2023 to Jan 02, 2023

RoHS Limit RoHS 限值

Restricted Substances 限用物質	Limits 限值
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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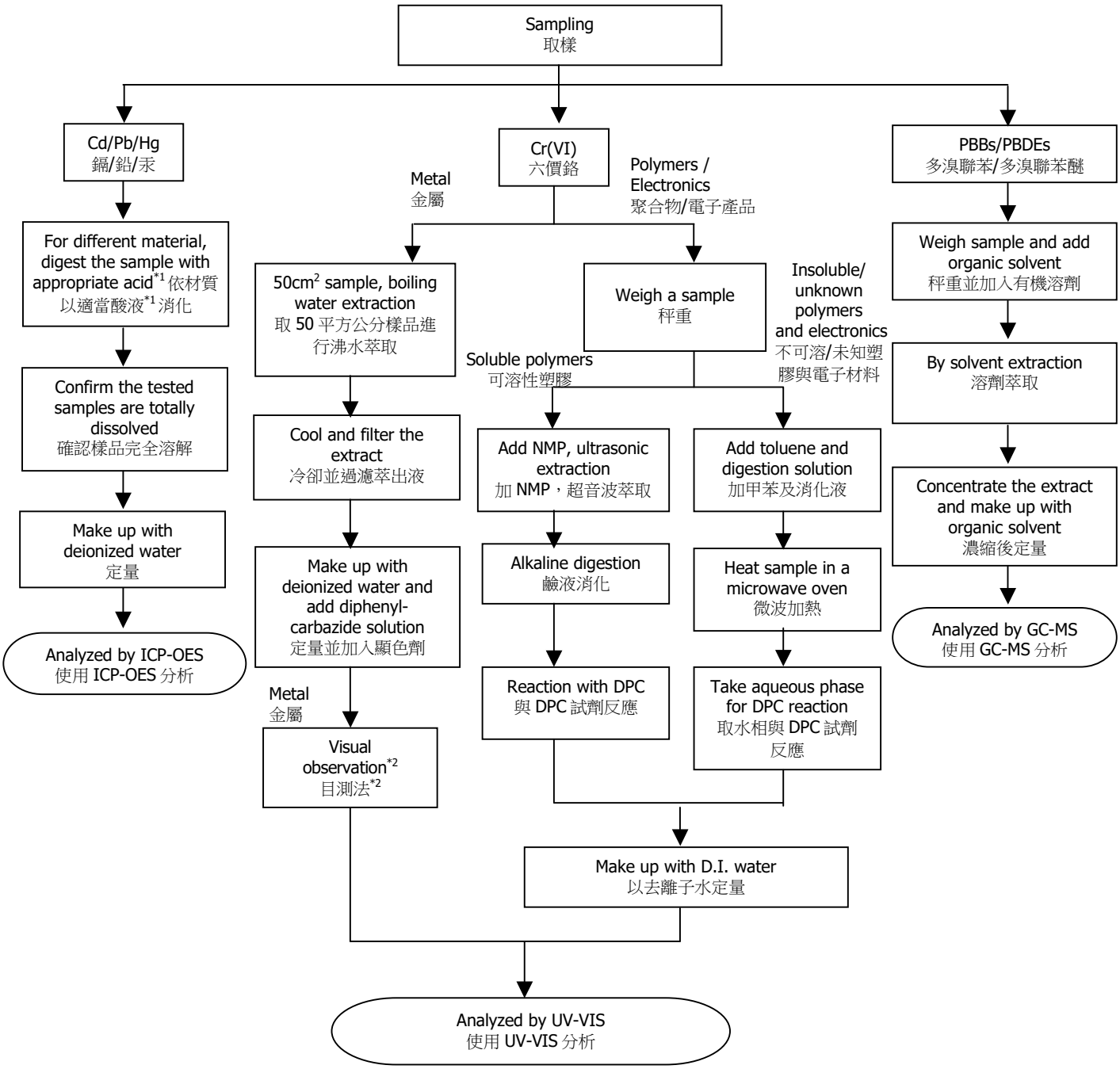
Test Conducted 測試內容：

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



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8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
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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：

Material 材質	Acid Added for Digestion 添加酸液種類
Polymers 聚合物	HNO_3,HCl,HF,H_2O_2,H_3BO_3 硝酸、鹽酸、氫氟酸、雙氧水、硼酸
Metals 金屬	HNO_3,HCl,HF 硝酸、鹽酸、氫氟酸
Electronics 電子產品	HNO_3,HCl,H_2O_2,HBF_4 硝酸、鹽酸、雙氧水、氟硼酸

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

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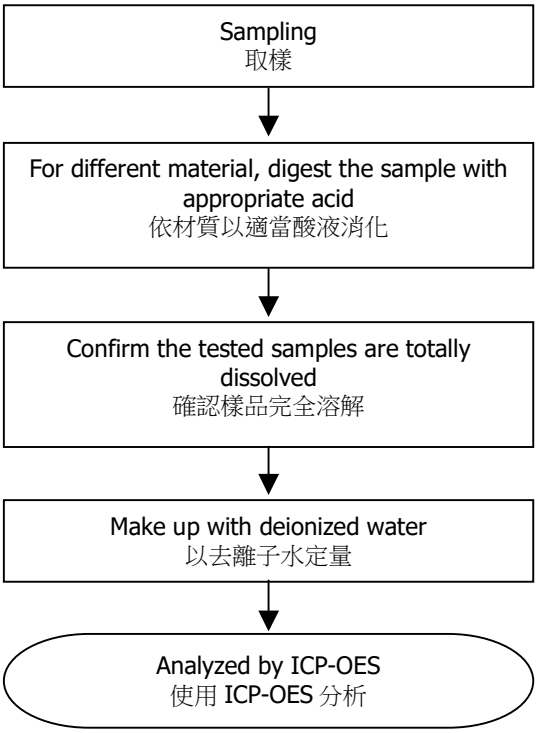
Test Conducted 測試內容：

Measurement Flowchart 測試流程圖:

Test for Heavy Metal (Sb) Content 重金屬(銻)
Reference Method 參考方法：USEPA 3052



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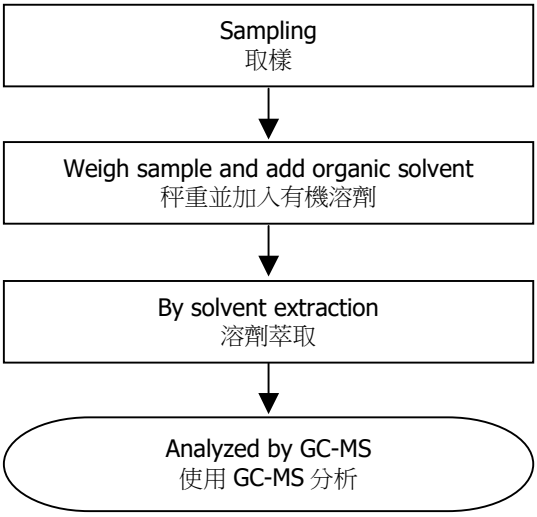
8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

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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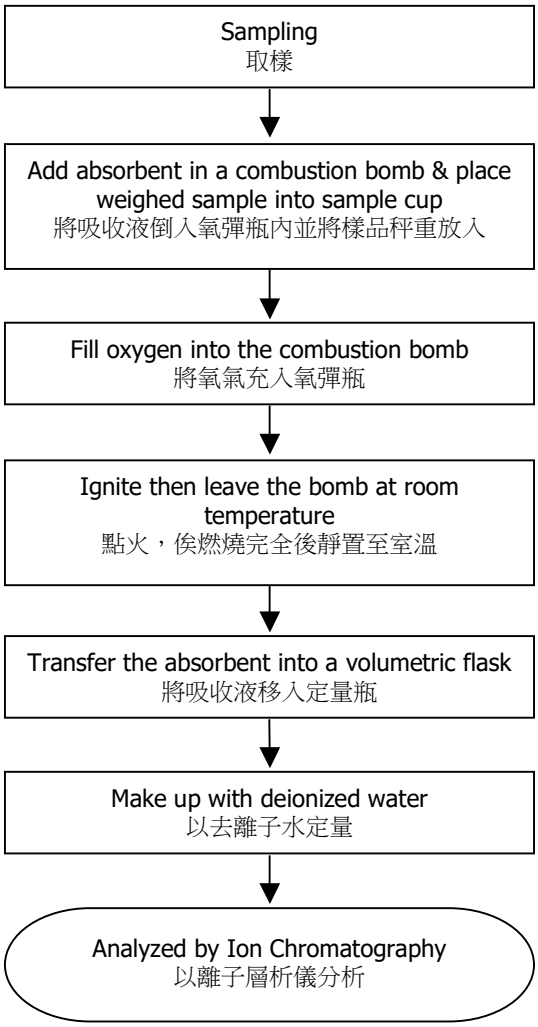
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Test Conducted 測試內容：

Measurement Flowchart 測試流程圖:

Test for Halogen Content 鹵素測試
Reference Method 參考方法：EN 14582:2016



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8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
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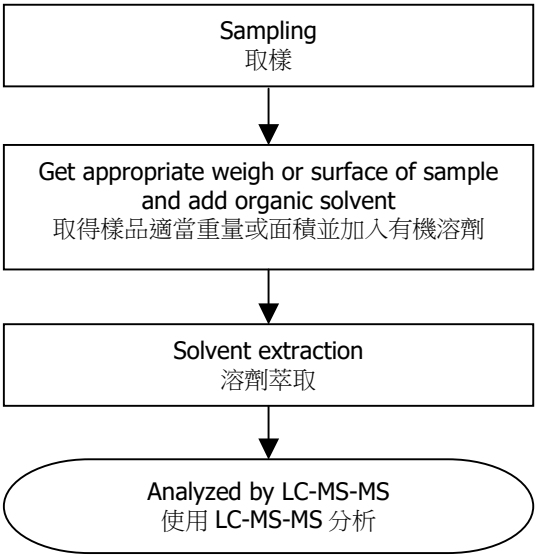
www.intertek-twn.com

Test Conducted 測試內容：

Measurement Flowchart 測試流程圖:

Test for Perfluorooctane Sulfonates (PFOS) / Perfluorooctanoic Acid (PFOA) Content 全氟辛磺酸 /全氟辛酸測試
Reference Method 參考方法：CEN/TS 15968:2010



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8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Sample photo 樣品照片：

Intertek Testing Services Taiwan Ltd.
全國公證檢驗股份有限公司

8F., No. 423, Ruiguang Rd., Neihu District,
Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓

Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

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Sample photo 樣品照片：

End of Report

Intertek Testing Services Taiwan Ltd.
全國公證檢驗股份有限公司

8F., No. 423, Ruiguang Rd., Neihu District,
Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓

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Fax: (+886-2) 6602-2420
www.intertek-twn.com

Test Report

No.: SHAEC23013103705 **Date:** Aug 31, 2023

Sample Name: NEOFLON FEP

Model No.:

The above sample(s) and information were provided by the client.

SGS Job No.: SHP23-010984

Sample Receiving Date: Aug 22, 2023

Testing Period: Aug 22, 2023 ~ Aug 28, 2023

Test Requested: Select test(s) as requested by the client.

Test Method(s): Please refer to next page(s).

Test Result(s): Please refer to next page(s).

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass
Alkanes C10-C13, chloro (short chain-chlorinated paraffins) (SCCPs)	See Results
Element(s)	See Results
Halogen	See Results
Phthalates	See Results
Sulfur (S)	See Results
Hexabromocyclododecane (HBCDD)	See Results
Polycyclic Aromatic Hydrocarbons (PAHs)	See Results

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Tom Ni

Tom Ni
Approved Signatory

scan to see the report

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3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

Test Result(s):

Test Part Description：

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	SHA23-0131037-0001.C001	Transparent solid pellet

Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%
(2) MDL = Method Detection Limit
(3) ND = Not Detected (< MDL)
(4) "-" = Not Regulated

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analysis was performed by ICP-OES, Hg analyzer, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A1
Cadmium(Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Polybromobiphenyl (PBBs)	1000	mg/kg	-	ND
Monobromobiphenyl (MonoBB)	-	mg/kg	5	ND
Dibromobiphenyl (DiBB)	-	mg/kg	5	ND
Tribromobiphenyl (TriBB)	-	mg/kg	5	ND
Tetrabromobiphenyl (TetraBB)	-	mg/kg	5	ND
Pentabromobiphenyl (PentaBB)	-	mg/kg	5	ND
Hexabromobiphenyl (HexaBB)	-	mg/kg	5	ND
Heptabromobiphenyl (HeptaBB)	-	mg/kg	5	ND
Octabromobiphenyl (OctaBB)	-	mg/kg	5	ND
Nonabromobiphenyl (NonaBB)	-	mg/kg	5	ND
Decabromobiphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether(PBDEs)	1000	mg/kg	-	ND
Monobromodiphenylether (MonoBDE)	-	mg/kg	5	ND
Dibromodiphenylether (DiBDE)	-	mg/kg	5	ND
Tribromodiphenylether (TriBDE)	-	mg/kg	5	ND
Tetrabromodiphenylether (TetraBDE)	-	mg/kg	5	ND
Pentabromodiphenylether (PentaBDE)	-	mg/kg	5	ND
Hexabromodiphenylether (HexaBDE)	-	mg/kg	5	ND
Heptabromodiphenylether (HeptaBDE)	-	mg/kg	5	ND
Octabromodiphenylether (OctaBDE)	-	mg/kg	5	ND
Nonabromodiphenylether (NonaBDE)	-	mg/kg	5	ND
Decabromodiphenylether (DecaBDE)	-	mg/kg	5	ND
Dibutyl Phthalate(DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate(BBP)	1000	mg/kg	50	ND

3rd Building, No.889 Yishan Road Xuhui District, Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
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Test Item(s)	Limit	Unit(s)	MDL	A1
Bis-(2-ethylhexyl) Phthalate(DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate(DIBP)	1000	mg/kg	50	ND

Notes:
(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
(2) IEC 62321 series is equivalent to EN 62321 series.
(3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

Alkanes C10-C13, chloro (short chain-chlorinated paraffins) (SCCPs)

Test Method: With reference to ISO 18219-1:2021, analysis was performed by GC-NCI-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Short Chain Chlorinated Paraffin(C10-C13)(SCCP)	85535-84-8	mg/kg	50	ND

Element(s)

Test Method: With reference to US EPA 3052:1996, analysis was performed by ICP-OES/AAS.

Test Item(s)	Unit(s)	MDL	A1
Phosphorus(P)	mg/kg	20	ND
Antimony(Sb)	mg/kg	10	ND

Halogen

Test Method: With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	Unit(s)	MDL	A1
Fluorine(F)	mg/kg	20	>100000
Chlorine(Cl)	mg/kg	50	ND
Bromine(Br)	mg/kg	50	ND
Iodine(I)	mg/kg	50	ND

Phthalates

Test Method: With reference to EN 14372:2004, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Diisononyl Phthalate (DINP)	28553-12-0 /68515-48-0	%	0.010	ND
Di-n-Octyl Phthalate(DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 /68515-49-1	%	0.010	ND

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Dimethyl Phthalate(DMP)	131-11-3	%	0.003	ND
Diethyl Phthalate(DEP)	84-66-2	%	0.003	ND
Dipentyl Phthalate (DnPP)	131-18-0	%	0.003	ND
Di-n-Hexyl Phthalate(DnHP)	84-75-3	%	0.003	ND
Bis(2-methoxyethyl)phthalate(DMEP)	117-82-8	%	0.003	ND
Diisopentyl Phthalate(DIPP)	605-50-5	%	0.003	ND
1,2-Benzenedicarboxylic Acid,di-C6-8-branched alkyl esters,C7-rich(DIHP)	71888-89-6	%	0.010	ND
1,2-Benzenedicarboxylic Acid,Di-C7-11-Branched and Linear Alkyl Esters(DHNUP)	68515-42-4	%	0.010	ND

Sulfur (S)

Test Method: With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	Unit(s)	MDL	A1
Sulfur(S)	mg/kg	50	ND

Hexabromocyclododecane (HBCDD)

Test Method: With reference to US EPA 3550C:2007, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Hexabromocyclododecane (HBCDD)	134237-50-6 /134237-51-7 /134237-52-8 /25637-99-4 /3194-55-6	mg/kg	10	ND

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method: With reference to AfPS GS 2019:01 PAK, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Benzo(a)pyrene(BaP)	50-32-8	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	192-97-2	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	mg/kg	0.1	ND
Benzo(b)Fluoranthene(BbF)	205-99-2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	mg/kg	0.1	ND
Benzo(k)Fluoranthene(BkF)	207-08-9	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	mg/kg	0.1	ND
Dibenzo(a,h)Anthracene(DBA)	53-70-3	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	mg/kg	0.1	ND

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Test Item(s)	CAS No.	Unit(s)	MDL	A1
Pyrene(PYR)	129-00-0	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	mg/kg	0.1	ND
Sum of Phenanthrene(PHE), Pyrene(PYR), Anthracene(ANT), Fluoranthene(FLT)	-	mg/kg	-	ND
Naphthalene(NAP)	91-20-3	mg/kg	0.1	ND
Sum of 15 PAHs	-	mg/kg	-	ND
Material Category	-	-	-	-

Notes:

AfPS（German commission for Product Safety）: PAHs requirements

Parameter	Category 1	Category 2		Category 3	
	Materials intended to be placed in the mouth, or materials coming into long-term contact with skin (more than 30s) during the intended use -in toys according to Directive 2009/48/EC or -for the use by children[a,b] up to 3 years of age.	Materials not covered by category 1, coming into long-term contact (more than 30s) or short-term repetitive contact[c] with skin during the intended or foreseeable use[d].		Materials covered neither by category 1 nor by category 2, coming into short-term contact (up to 30s) with skin during the intended or foreseeable use.	
		a. use by children	b. other consumer products	a. use by children	b. other consumer products
Benzo(a)pyrene (BaP) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene (BeP) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene (BaA) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene (BbF) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene (BjF) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene (BkF)mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene (CHR) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1

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Dibenzo(a,h)anthracene (DBA) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene (BPE) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene (IPY) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Phenanthrene (PHE), pyrene (PYR), anthracene (ANT), fluoranthene (FLT), mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene (NAP) mg/kg	< 1	< 2		< 10	
Sum of 15 PAHs	<1	< 5	< 10	< 20	< 50

Notes:
[a] A “Child” is legally defined as a person before reaching the age of 14 years.
[b] Use by children includes both active and passive contact by children.
[c] Definition “short-term repetitive contact” taken from REACH Annex XVII entry 50 amendment (Regulation (EC) No.1272/2013)
[d] According to the definition of the German Product Safety Act (ProdSG) (chapter 1 Article 2 No. 28) “foreseeable use” shall mean the use of a product in a manner that the person placing it on the market, has not intended, but which could be reasonably foreseeable.

Remark:
The German committee on Product Safety (AfPS) published a new PAHs document (AfPS GS 2019:01 PAK) on April 10, 2020, which will be binding for the issue of GS mark certificate from July 1, 2020.

Results & photo(s) of this report refer to test report SHAEC23013103701.
Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (*w*=0) stated in ILAC-G8:09/2019.

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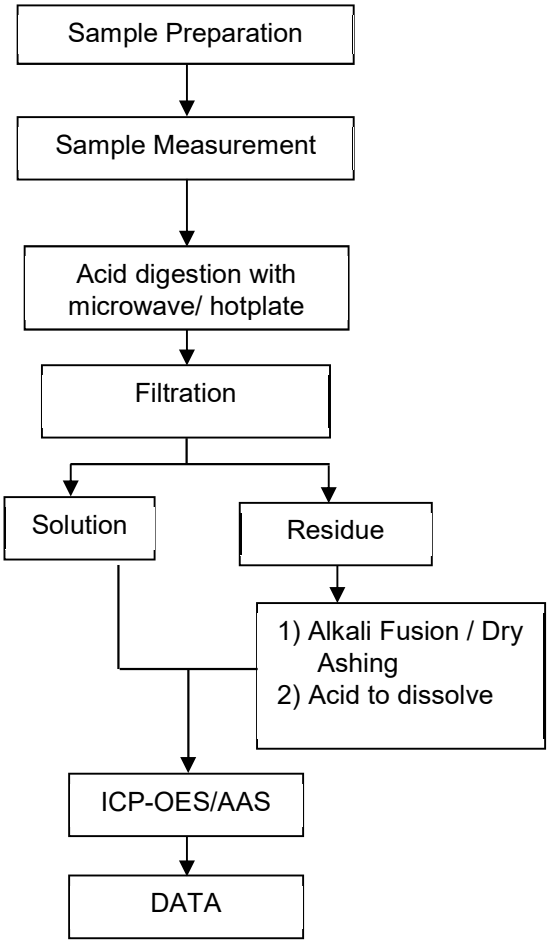
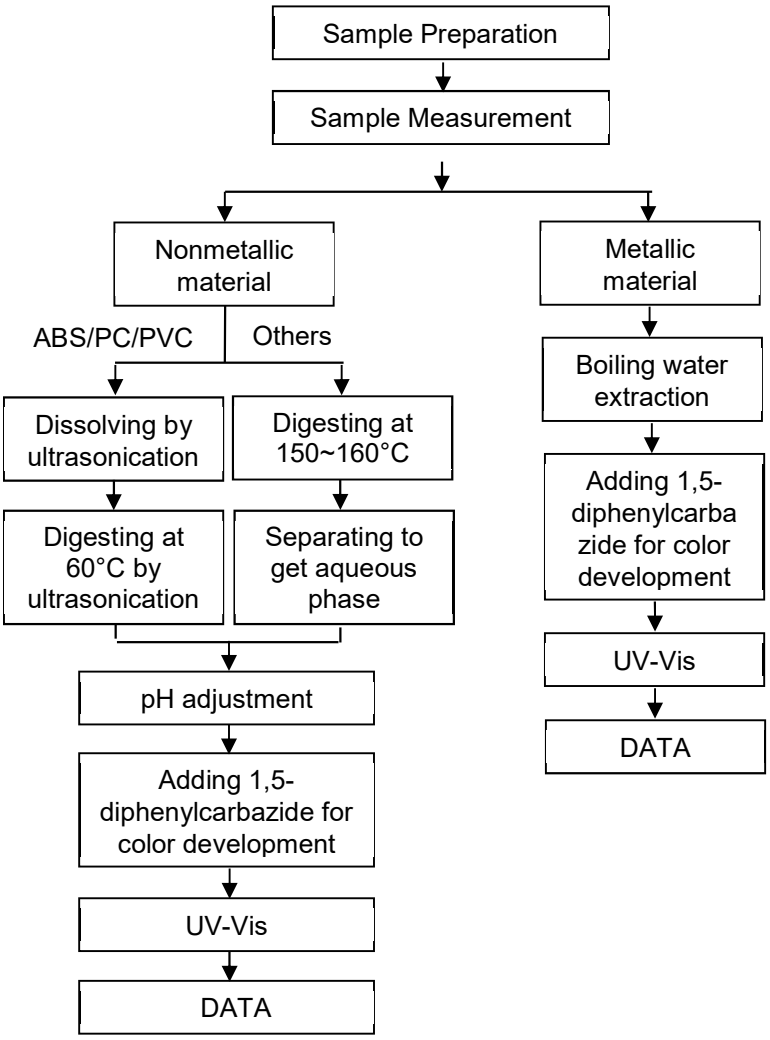
Elements Testing Flow Chart

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



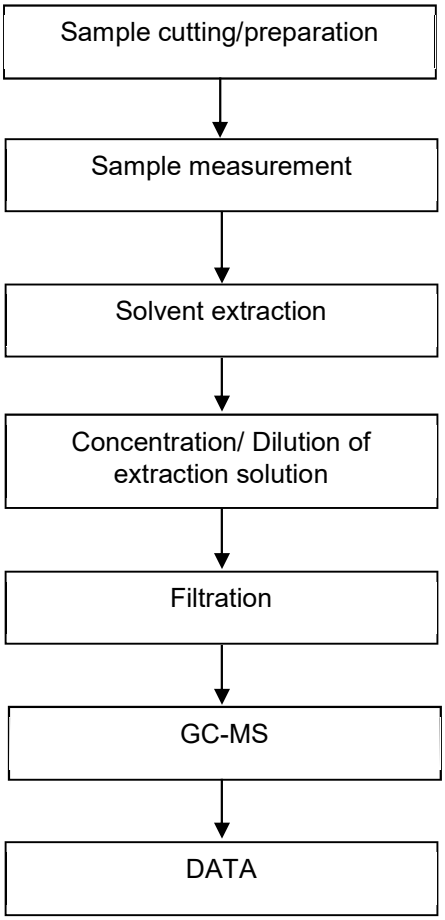
ATTACHMENTS

Hexavalent Chromium (Cr(VI)) Testing Flow Chart



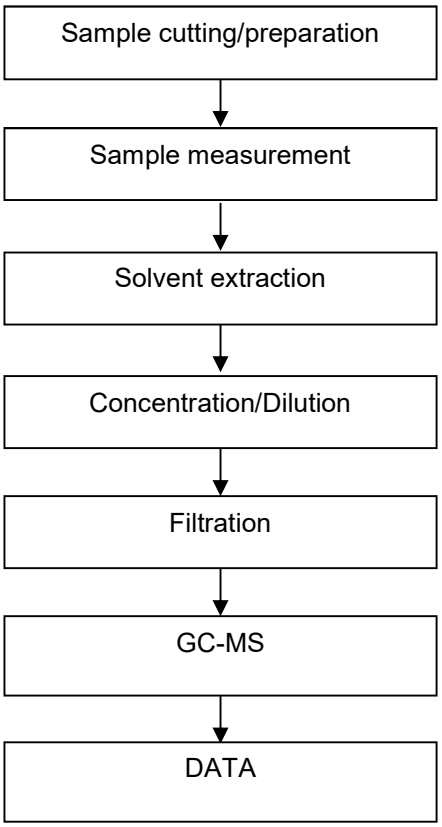
ATTACHMENTS

PBBs/PBDEs Testing Flow Chart



ATTACHMENTS

Phthalates Testing Flow Chart



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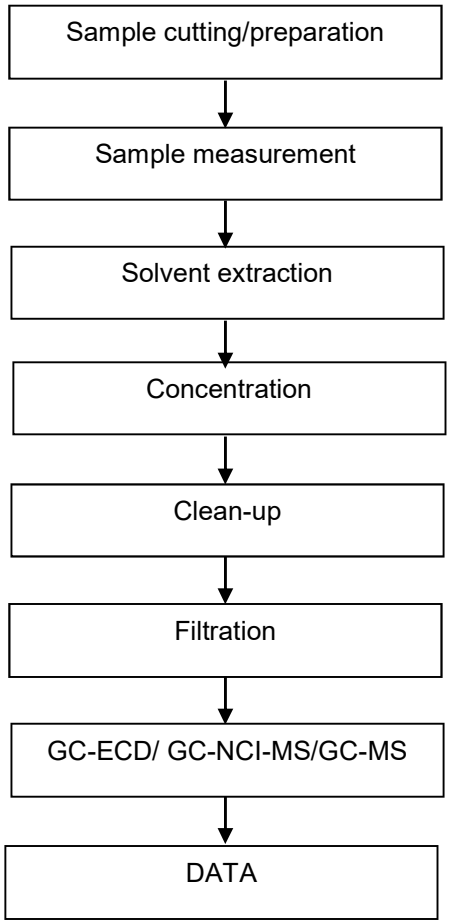
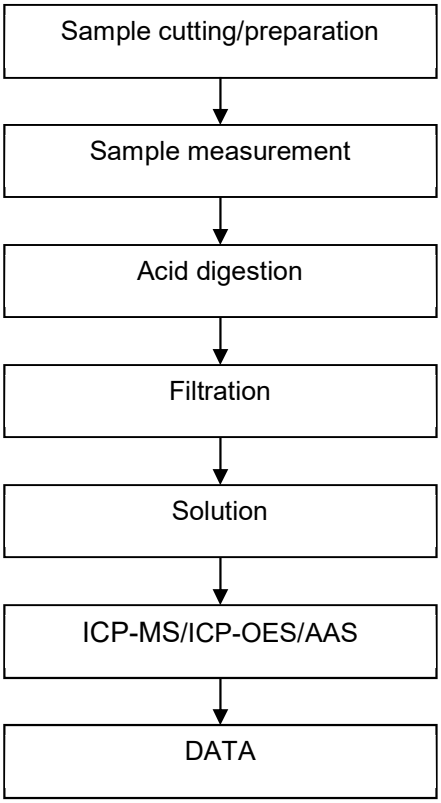
ATTACHMENTS

Chlorinated Paraffin Testing Flow Chart



ATTACHMENTS

Elements Testing Flow Chart



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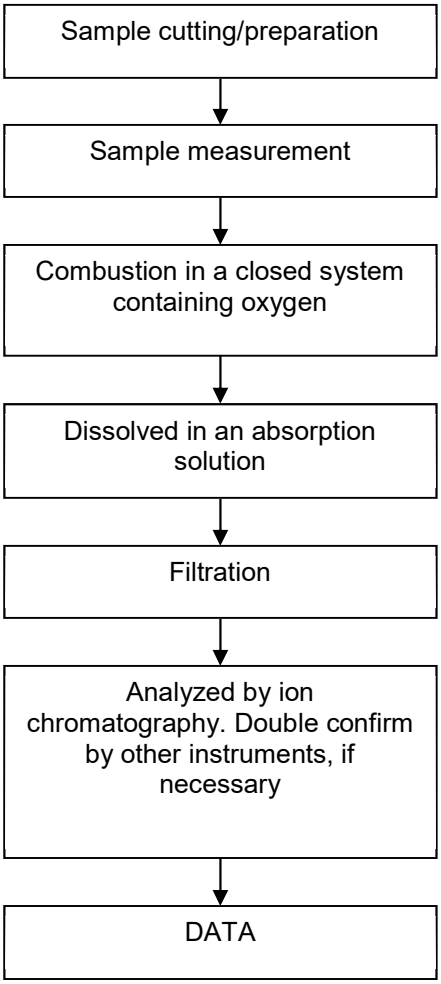
Halogen Testing Flow Chart



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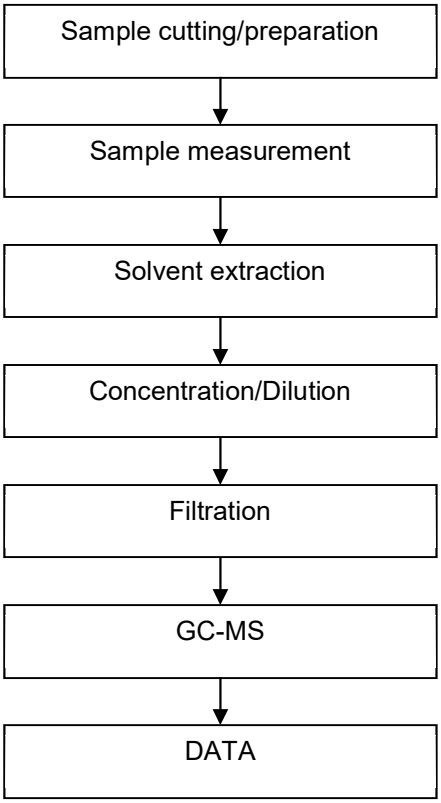
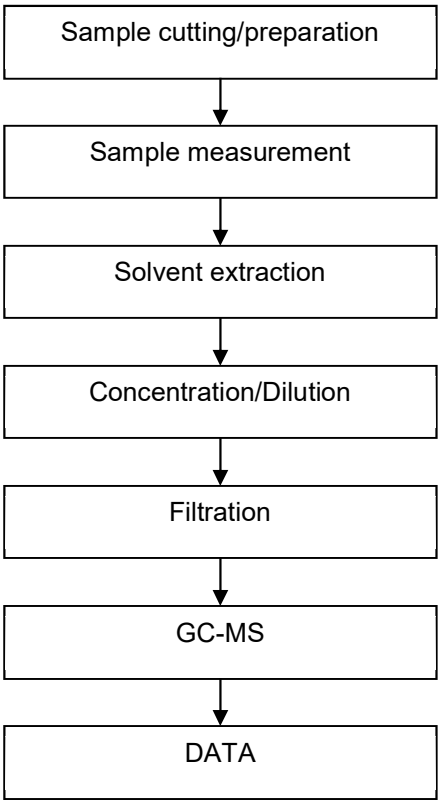
HBCDD Testing Flow Chart



ATTACHMENTS

PAHs Testing Flow Chart



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Sample Photo:

SHA23-0131037-0001.C001

SGS authenticate the photo on original report only

*** End of Report ***

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Test Report 測試報告

Number : TWNC01231370
報告號碼

Applicant: WONDERFUL HI-TECH CO., LTD.
申請廠商 萬泰科技股份有限公司
No.17, Beiyuan Rd., Zhongli Dist.,
Taoyuan City 320, Taiwan (R.O.C.)
桃園市中壢區工業區北園路 17 號

Issue Date : Jan 12, 2024
報告發行日期

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 Submitted By 送樣廠商	:	WONDERFUL HI-TECH CO., LTD. 萬泰科技股份有限公司
Sample Description 樣品名稱	:	裸銅線, 鍍銀銅包鋼線, 鍍銀銅線, 鍍錫銅線 (COPPER, SILVER-PLATED COPPER CLAD)
Style / Item No. 產品型號	:	裸銅 COPPER/銅包鋼 SILVER-PLATED COPPER CLAD STEEL/鍍銀層 SILVER-PLATED/ 鍍錫層 TIN-PLATED
Date Sample Received 收件日期	:	Dec 13, 2023
Date Test Started 開始測試日期	:	Dec 13, 2023

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	Standard 標準	Result 結果
Test Components of Submitted Samples 測試部位	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	Pass 合格

Tested Components 測試元件:

(1) Coppery metal wire
(2) Silvery metal wire
(3) Silvery metal wire
(4) Silvery 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

Intertek Testing Services Taiwan Ltd.
全國公證檢驗股份有限公司
8F., No. 423, Ruiguang Rd., Neihu District,
Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Test Conducted 測試內容：

Test Result Summary 測試結果：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (1)	Result 結果 (2)	RL
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. 參考 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. 參考 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. 參考 IEC 62321-4:2013+AMD 1:2017，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 @	μg/ cm^2	With reference to IEC 62321-7-1: 2015, by boiling water extraction and determined by UV-Vis Spectrophotometer or visual observation. 參考 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	Negative	0.10

Intertek Testing Services Taiwan Ltd.
全國公證檢驗股份有限公司
8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (1)	Result 結果 (2)	RL
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. 參考 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 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		ND	ND	5
Heptabrominated Biphenyls (HeptaBB) 七溴聯苯	ppm		ND	ND	5
Octabrominated Biphenyls (OctaBB) 八溴聯苯	ppm		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
Polybrominated Diphenyl Ethers (PBDEs) 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. 參考 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

Intertek Testing Services Taiwan Ltd.
全國公證檢驗股份有限公司
8F., No. 423, Ruiguang Rd., Neihu District, Taipei, 114690, Taiwan, R.O.C.
114690 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885
Fax: (+886-2) 6602-2420
www.intertek-twn.com

Number : TWNC01231370
報告號碼

Test Conducted 測試內容：

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

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (3)	Result 結果 (4)	RL
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. 參考 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. 參考 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. 參考 IEC 62321-4:2013+AMD 1:2017，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 @	μg/ cm^2	With reference to IEC 62321-7-1: 2015, by boiling water extraction and determined by UV-Vis Spectrophotometer or visual observation. 參考 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	Negative	0.10

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全國公證檢驗股份有限公司
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114690 台北市內湖區瑞光路 423 號 8 樓
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Fax: (+886-2) 6602-2420
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Test Conducted 測試內容：

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 (3)	Result 結果 (4)	RL
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. 參考 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 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		ND	ND	5
Heptabrominated Biphenyls (HeptaBB) 七溴聯苯	ppm		ND	ND	5
Octabrominated Biphenyls (OctaBB) 八溴聯苯	ppm		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
Polybrominated Diphenyl Ethers (PBDEs) 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. 參考 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：

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

Remarks: 備註
ppm = Parts per million based on weight of tested sample = mg/kg
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	Explanation 說明
< 0.10 μg/cm^2	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。
≥ 0.10 μg/cm^2 and ≤ 0.13 μg/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/cm^2	Positive 陽性	The result of sample is positive for Cr(VI). The sample coating is considered to contain Cr(VI). 六價鉻結果為陽性。樣品之鍍層可視為含有六價鉻。 A result expresses as Positive, while not an actual value, which indicates a visual observation was used. 當結果以陽性表示，而非數值時，為使用目測法判定。

Responsibility of Chemist 分析人員 : Cloud Hsu/ Vita Fu

Date Sample Received 樣品收件日期 : Dec 13, 2023
Test Period 樣品測試期間 : Dec 13, 2023 to Jan 02, 2024

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Test Conducted 測試內容：

RoHS Limit RoHS 限值

Restricted Substances 限用物質	Limits 限值
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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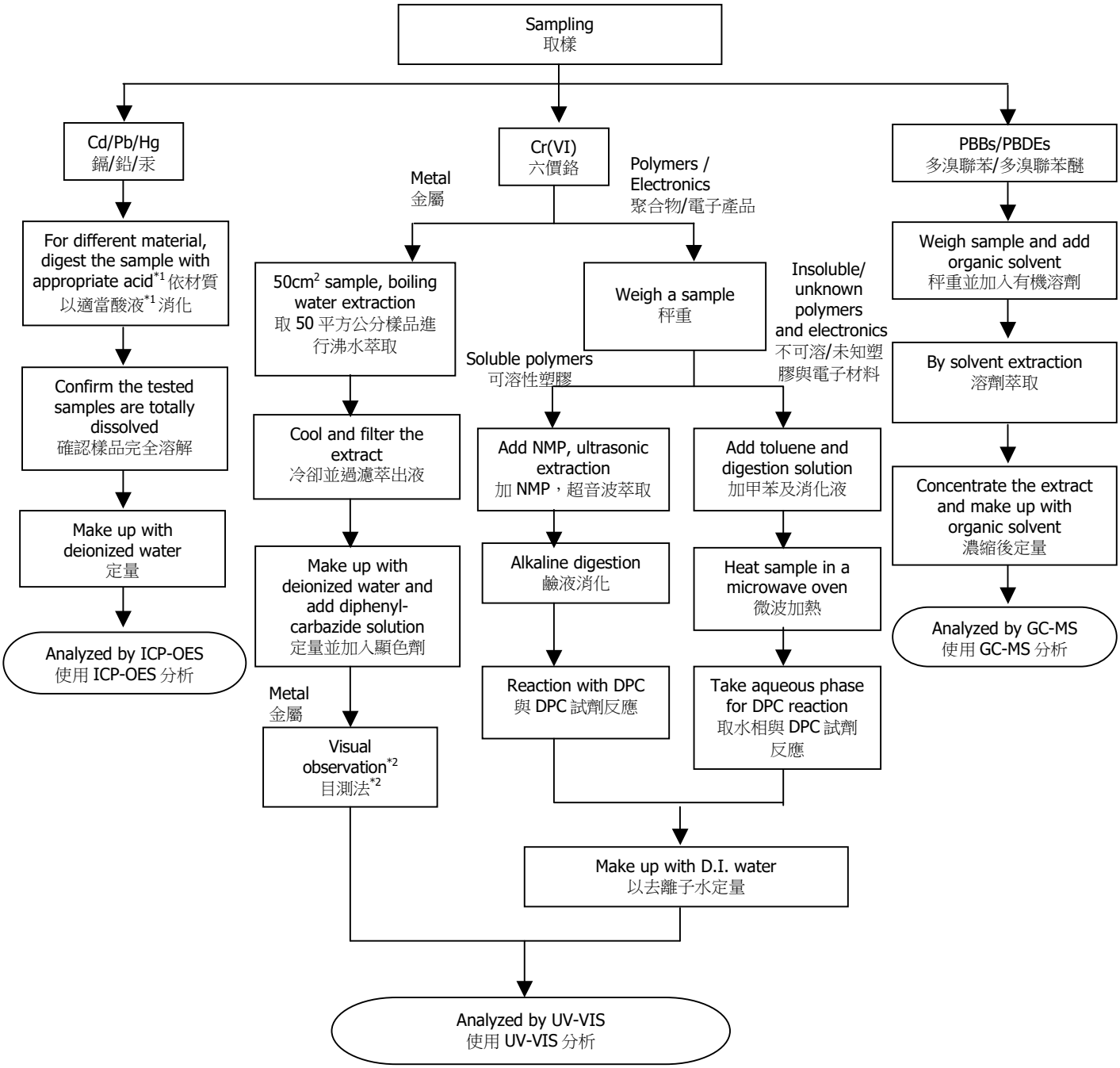
Test Conducted 測試內容：

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



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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：

Material 材質	Acid Added for Digestion 添加酸液種類
Polymers 聚合物	HNO_3,HCl,HF,H_2O_2,H_3BO_3 硝酸、鹽酸、氫氟酸、雙氧水、硼酸
Metals 金屬	HNO_3,HCl,HF 硝酸、鹽酸、氫氟酸
Electronics 電子產品	HNO_3,HCl,H_2O_2,HBF_4 硝酸、鹽酸、雙氧水、氟硼酸

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

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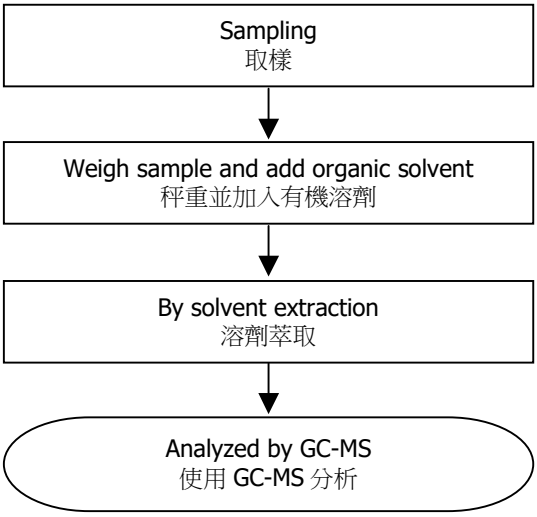
Test Conducted 測試內容：

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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Fax: (+886-2) 6602-2420
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Number : TWNC01231370
報告號碼

Sample photo 樣品照片：

End of Report

Intertek Testing Services Taiwan Ltd.
全國公證檢驗股份有限公司

8F., No. 423, Ruiguang Rd., Neihu District,
Taipei, 114690, Taiwan, R.O.C.
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測試報告
Test Report

號碼(No.): ETR24205315　　日期(Date): 04-Mar-2024　　

昇貿科技股份有限公司 (SHENMAO TECHNOLOGY INC.)
桃園市觀音區大潭里大潭北路665號 (NO. 665, DATAN N. RD., GUANYIN DIST.,TAOYUAN CITY 328, 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 the applicant as)：

樣品名稱(Sample Name)	:	LEAD-FREE SOLDER
樣品型號(Style/Item No.)	:	PF606

==========

收件日(Sample Receiving Date)	:	26-Feb-2024
測試期間(Testing Period)	:	26-Feb-2024 to 04-Mar-2024

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) 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.)

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

CHECK REPORT
PIN CODE: 9CD419B8

測試報告
Test Report

昇貿科技股份有限公司 (SHENMAO TECHNOLOGY INC.)
桃園市觀音區大潭里大潭北路665號 (NO. 665, DATAN N. RD., GUANYIN DIST.,TAOYUAN CITY 328, TAIWAN)

測試部位敘述 (Test Part Description)

No.1 : 銀色金屬 (SILVER COLORED METAL)

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
鎘 (Cd) (Cadmium (Cd))	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.
鉛 (Pb) (Lead (Pb))		mg/kg	2	254
汞 (Hg) (Mercury (Hg))	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.
六價鉻 (Hexavalent Chromium) Cr(VI) (#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.
一溴聯苯 (Monobromobiphenyl)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	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)		mg/kg	5	n.d.
多溴聯苯總和 (Sum of PBBs)		mg/kg	-	n.d.

測試報告
Test Report

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測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
一溴聯苯醚 (Monobromodiphenyl ether)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	mg/kg	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	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.
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP))	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP))		mg/kg	50	n.d.
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP))		mg/kg	50	n.d.
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))		mg/kg	50	n.d.
鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1)		mg/kg	50	n.d.
鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (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 (DNOP)) (CAS No.: 117-84-0)		mg/kg	50	n.d.

測試報告
Test Report

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測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
六溴環十二烷及所有主要被辨別出的異構物 (HBCDD) (α- HBCDD, β- HBCDD, γ- HBCDD) (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))	參考IEC 62321: 2008，以氣相層析儀/質譜儀分析。(With reference to IEC 62321: 2008, analysis was performed by GC/MS.)	mg/kg	5	n.d.
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-8)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1)		mg/kg	50	n.d.
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)		mg/kg	50	n.d.
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)		mg/kg	50	n.d.
鈹 (Be) (Beryllium (Be)) (CAS No.: 7440-41-7)	參考US EPA 3050B: 1996，以感應耦合電漿發射光譜儀分析。(With reference to US EPA 3050B: 1996, analysis was performed by ICP-OES.)	mg/kg	2	n.d.
銻 (Sb) (Antimony (Sb)) (CAS No.: 7440-36-0)	參考US EPA 3050B: 1996，以感應耦合電漿發射光譜儀分析。(With reference to US EPA 3050B: 1996, analysis was performed by ICP-OES.)	mg/kg	2	78.1
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.
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.

測試報告
Test Report

昇貿科技股份有限公司 (SHENMAO TECHNOLOGY INC.)
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備註(Note)：

1. mg/kg = ppm；0.1wt% = 0.1% = 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. (#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 μg/cm² 時，無法確定塗層是否含有六價鉻。(The result between 0.10 μg/cm² and 0.13 μg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.)

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PFAS Remark：

現有PFAS定量技術是分析PFAS物質的特定結構，但同碳數族群之PFAS酸及鹽類物質，其可被辨識的特定結構相同，因此無法區別所分析的特定結構是來自酸或者鹽類，故測試結果為同碳數族群之PFAS之酸及鹽類物質的濃度總合。下表PFAS物質濃度皆已包含在測試結果中，相關資訊請參見下表：(下表列舉PFAS物質僅為範例，並不包含所有同碳數族群之PFAS鹽類。)
(The quantitative technology of PFAS is to analyze the specific structure of PFAS substances. However, PFAS acid and its salts with the same carbon number group have the same specific structure that can be identified. The tested results of the analyzed specific structure cannot be distinguished to identify the contribution from PFAS acid or its salts. Therefore, the tested results display the sum of concentrations of PFAS acids and its salts with the same carbon number group. The concentration of PFAS substances in the below table have been included in the tested results, please refer to the table for relevant information: (The listed PFAS substances are examples only, it do not include all PFAS salts with the same carbon number group.))

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFOS, 及其鹽&衍生物 (PFOS, its salts & derivatives)	全氟辛烷磺酸 (Perfluorooctane sulfonates) (PFOS)	1763-23-1
	全氟辛基磺酸鉀 (PFOS-K) Potassium perfluorooctanesulfonate (PFOS-K)	2795-39-3
	全氟辛基磺酸鋰 (PFOS-Li) Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	29457-72-5
	全氟辛基磺酸銨 (PFOS-NH_4) Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH_4)	29081-56-9
	全氟辛基磺酸二乙醇銨 (PFOS-$NH(OH)_2$) Perfluorooctane sulfonate diethanolamine salt (PFOS-$NH(OH)_2$)	70225-14-8
	全氟辛基磺酸四乙基銨 (PFOS-$N(C_2H_5)_4$) Perfluorooctanesulfonic acid,tetraethylammonium salt (PFOS-$N(C_2H_5)_4$)	56773-42-3
	全氟辛基磺酸二癸二甲基銨 (PFOS-DDA) N-decyl-N,N-dimethyldecan-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-sulfonate (PFOS-DDA)	251099-16-8

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群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFOS, 及其鹽&衍生物 (PFOS, its salts & derivatives)	全氟辛基磺醯氟 (POSF) Perfluorooctane sulfonyl fluoride (POSF)	307-35-7
	全氟辛基磺酸鎂 (PFOS-Mg) Perfluorooctanesulfonic acid, magnesium salt (PFOS-Mg)	91036-71-4
	全氟辛基磺酸鈉 (PFOS-Na) Perfluorooctanesulfonic acid, sodium salt (PFOS-Na)	4021-47-0
	全氟辛烷磺酸哌啶 Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctanesulfonate	71463-74-6
PFOA, 及其鹽&衍生物 (PFOA, its salts & derivatives)	全氟辛酸 (Perfluorooctanoic acid) (PFOA)	335-67-1
	全氟辛酸鈉 (PFOA-Na) Sodium perfluorooctanoate (PFOA-Na)	335-95-5
	全氟辛酸鉀 (PFOA-K) Potassium perfluorooctanoate (PFOA-K)	2395-00-8
	全氟辛酸銀 (PFOA-Ag) Silver perfluorooctanote (PFOA-Ag)	335-93-3
	全氟辛氟 (PFOA-F) Perfluorooctanoyl fluoride (PFOA-F)	335-66-0
	全氟辛酸銨 (APFO) Ammonium pentadecafluorooctanoate (APFO)	3825-26-1
	全氟辛酸鋰 (PFOA-Li) Lithium perfluorooctanoate (PFOA-Li)	17125-58-5

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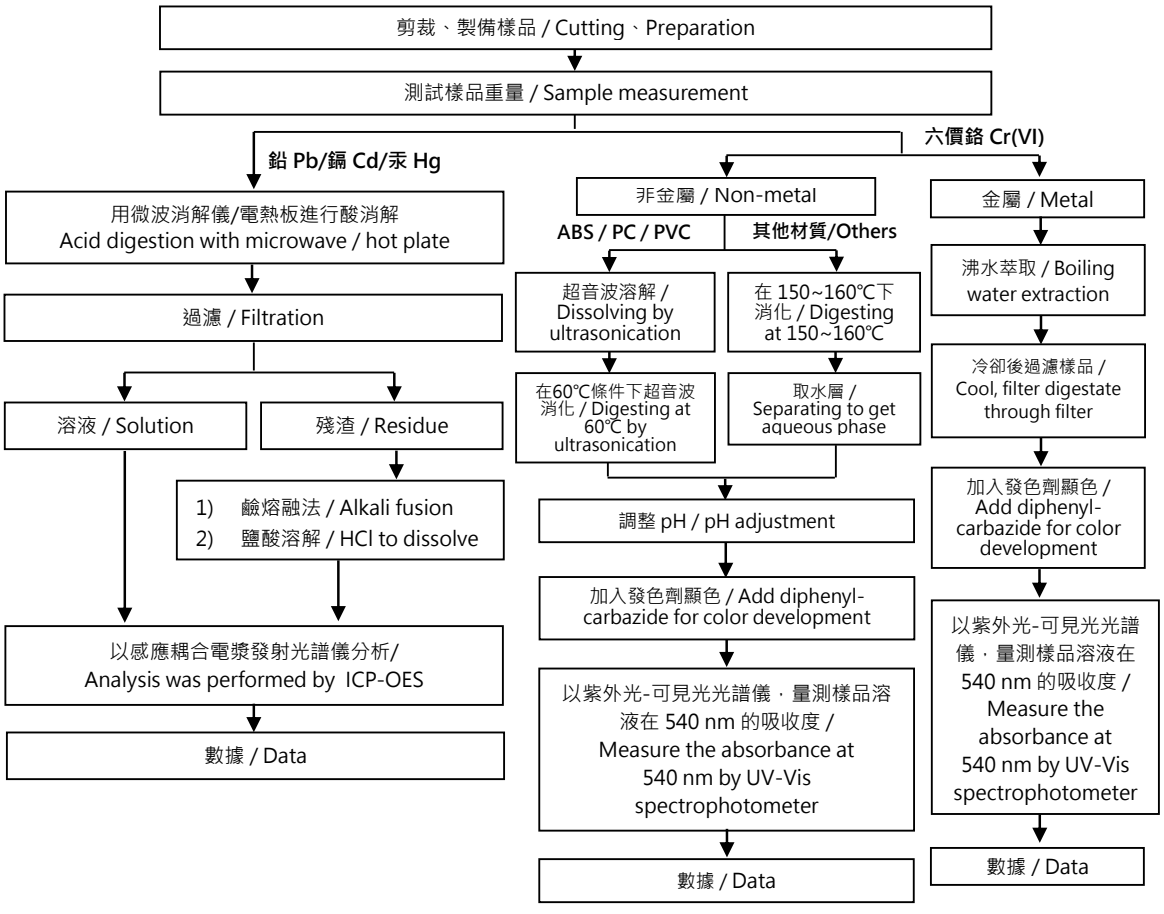
重金屬流程圖 / Analytical flow chart of heavy metal

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）



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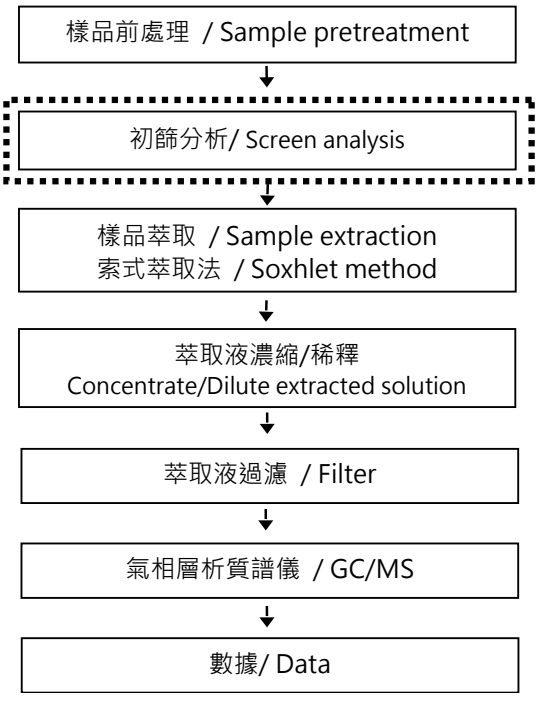
多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs

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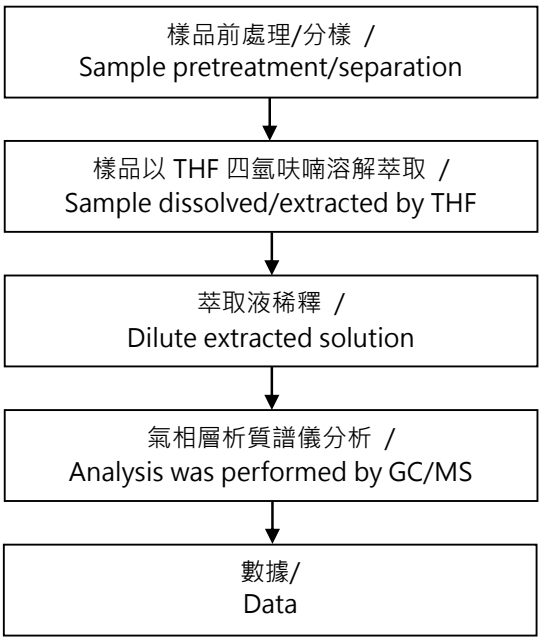
可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】



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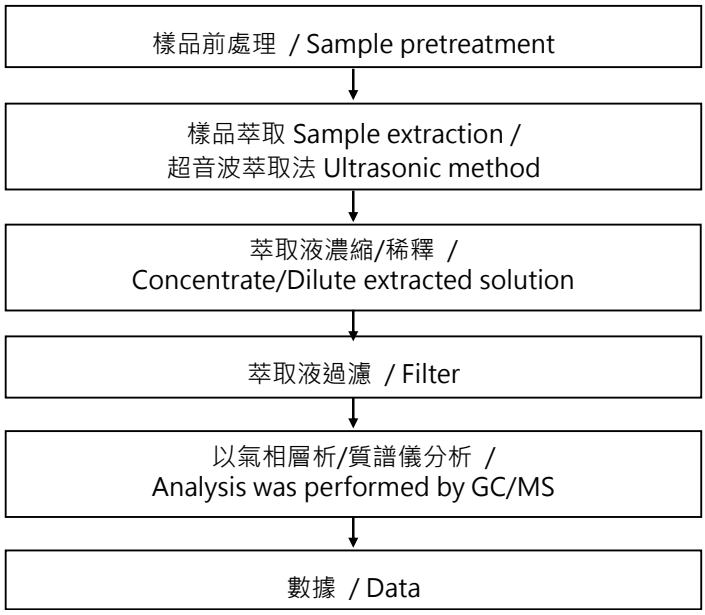
六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD



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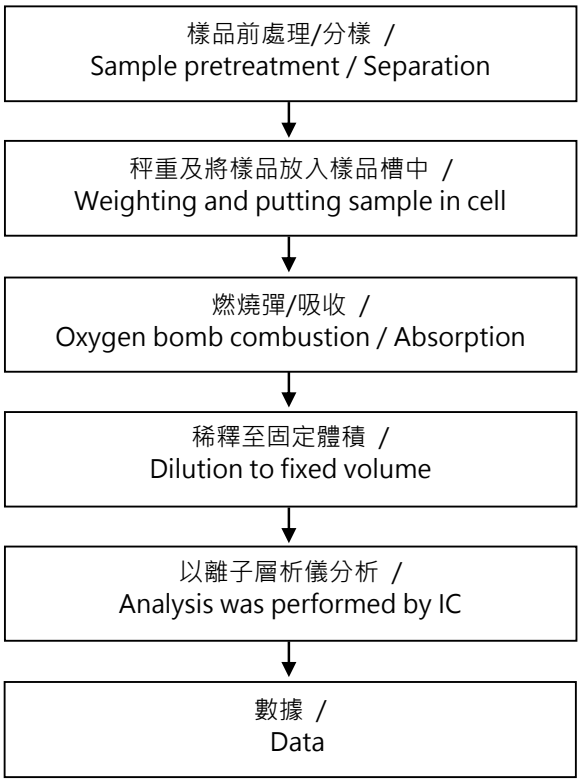
鹵素分析流程圖 / Analytical flow chart - Halogen



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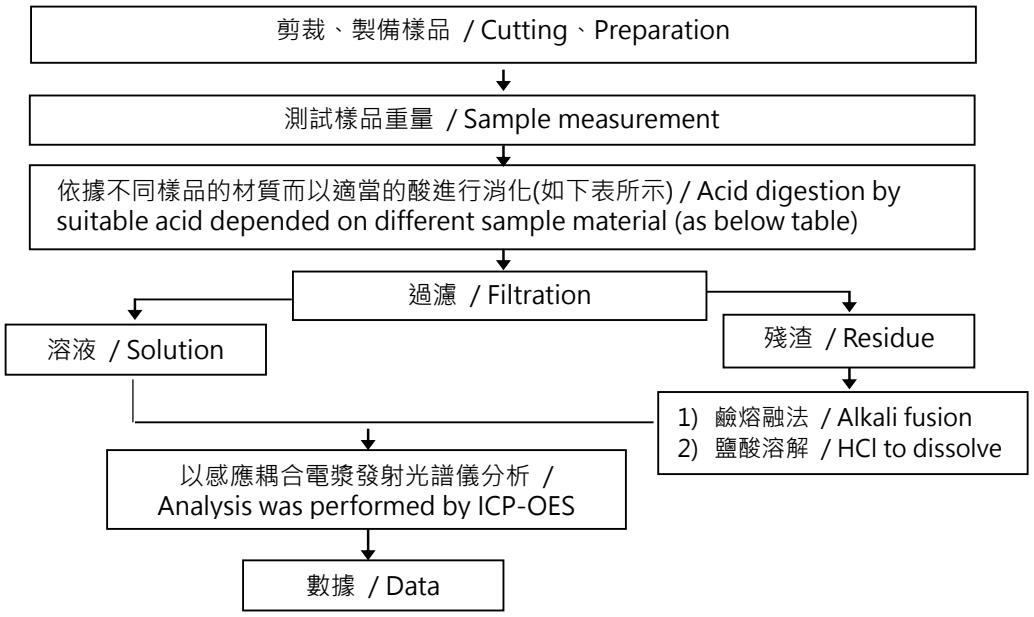
元素以 ICP-OES 分析的消化流程圖

(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_2O_2
玻璃 / Glass	硝酸,氫氟酸 / HNO_3,HF
金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO_3
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H_2SO_4, H_2O_2, HNO_3, HCl
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion

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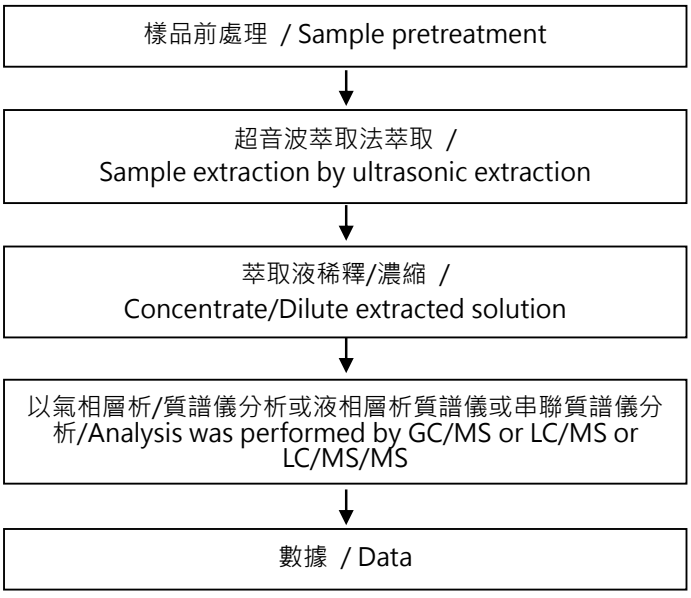
全氟化合物(包含全氟辛酸/全氟辛烷磺酸/其相關化合物等等)分析流程圖 / Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



測試報告
Test Report

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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.)

ETR24205315

** 報告結尾 (End of Report) **

測試報告
Test Report

報告編號(No.): HKC23800038　　報告日期(DATE): 2023/08/18　　頁數(PAGE): 1 of 7

義成科技有限公司 (YIH CHERNG ENTERPRISE CO., LTD.)
臺南市關廟區中正路429號 (NO.429, ZHONGZHENG RD., GUANMIAO DIST., TAINAN CITY 718, 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)	:	義成科技有限公司 (YIH CHERNG ENTERPRISE CO., LTD.)
樣品名稱(Sample Description)	:	聚乙烯發泡板(EVA黑)
收件日(Sample Receiving Date)	:	2023/08/09
測試期間(Testing Period)	:	2023/08/09 to 2023/08/18

測試結果 (Test Results) : 請見下一頁。(Please refer to next page(s).)

報告簽署人/張伯睿 博士/部經理
Ray Chang, Ph.D. / Department Manager
Signed for and on behalf of
SGS Taiwan Ltd
化學實驗室-高雄/
Chemical Laboratory-Kaohsiung

測試報告
Test Report

義成科技有限公司 (YIH CHERNG ENTERPRISE CO., LTD.)
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測試部位敘述(Test Part Description)

No.1 : 黑色泡棉 (BLACK FOAM)

測試結果(Test Results)

測試項目 (Test Item(s))	測試方法 (Method)	單位 (Unit)	RL	結果 (Result)
				No.1
鉛 (Pb) / Lead (Pb) (CAS No.7439-92-1)	參考IEC 62321-5: 2013，以感應耦合電漿原子發射光譜儀分析。 / With reference to IEC 62321-5: 2013. Analysis was performed by ICP-OES.	mg/kg	2	4.58
鎘 (Cd) / Cadmium (Cd) (CAS No.7440-43-9)		mg/kg	2	n.d.
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.
六價鉻 Cr(VI) / Hexavalent Chromium Cr(VI) (CAS No.18540-29-9)	參考IEC 62321-7-2: 2017，以紫外光-可見光分光光度計分析。 / With reference to IEC 62321-7-2: 2017. Analysis was performed by UV-Vis.	mg/kg	8	n.d.
多溴聯苯 (PBBs) / Polybrominated biphenyl (PBBs)				
一溴聯苯 / Monobromobiphenyl	參考IEC 62321-6: 2015，以氣相層析質譜儀檢測。 / With reference to IEC 62321-6: 2015, the analysis was performed by GC/MS.	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		mg/kg	5	n.d.
多溴聯苯總和 / Sum of PBBs		mg/kg	-	n.d.

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測試項目 (Test Item(s))	測試方法 (Method)	單位 (Unit)	RL	結果 (Result) No.1
多溴聯苯醚 (PBDEs) / Polybrominted biphenyl ethers (PBDEs)				
一溴聯苯醚 / Monobromodiphenyl ether	參考IEC 62321-6: 2015，以氣相層析質譜儀檢測。 / With reference to IEC 62321-6: 2015, the analysis was performed by GC/MS.	mg/kg	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	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.
鄰苯二甲酸二異丁酯 (DIBP) / Diisobutyl phthalate (DIBP) (CAS No.84-69-5)	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。 / With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
鄰苯二甲酸二丁酯 (DBP) / Dibutyl phthalate (DBP) (CAS No.84-74-2)		mg/kg	50	n.d.
鄰苯二甲酸丁苯甲酯 (BBP) / Butyl benzyl phthalate (BBP) (CAS No.85-68-7)		mg/kg	50	n.d.
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) / Di-(2-ethylhexyl) phthalate (DEHP) (CAS No.117-81-7)		mg/kg	50	n.d.
鄰苯二甲酸二異壬酯 (DINP) / Diisononyl phthalate (DINP) (CAS No.28553-12-0, 68515-48-0)		mg/kg	50	n.d.
鄰苯二甲酸二異癸酯 (DIDP) / Diisodecyl phthalate (DIDP) (CAS No.26761-40-0, 68515-49-1)		mg/kg	50	n.d.
鄰苯二甲酸二正辛酯 (DNOP) / Di-n-octyl phthalate (DNOP) (CAS No.117-84-0)		mg/kg	50	n.d.

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測試項目 (Test Item(s))	測試方法 (Method)	單位 (Unit)	RL	結果 (Result)
				No.1
富馬酸二甲酯 (DMFu) / Dimethyl fumarate (DMFu) (CAS No.624-49-7)	參考US EPA 3550C: 2007，以氣相層析儀/質譜儀分析。 / With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.	mg/kg	0.1	n.d.
聚氯乙烯 / PVC (△)	以紅外光譜分析及焰色法檢測。 / Analysis was performed by FTIR and FLAME Test.	-	-	Negative
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.
全氟辛酸 (PFOA)及其鹽類 / Perfluorooctanoic acid (PFOA) and it's salt (CAS No.335-67-1 and its salts)		mg/kg	0.01	n.d.
鹵素-氟(F) / Halogen-Fluorine(F) (CAS No.14762-94-8)	參考BS EN 14582: 2016，以離子層析儀分析。 / With reference to BS EN 14582: 2016. Analysis was performed by IC.	mg/kg	50	97.4
鹵素-溴(Br) / Halogen-Bromine(Br) (CAS No.10097-32-2)		mg/kg	50	n.d.
鹵素-氯(Cl) / Halogen-Chlorine(Cl) (CAS No.22537-15-1)		mg/kg	50	n.d.
鹵素-碘(I) / Halogen-Iodine(I) (CAS No.14362-44-8)		mg/kg	50	n.d.

測試報告
Test Report

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測試項目 (Test Item(s))	測試方法 (Method)	單位 (Unit)	RL	結果 (Result) No.1
多環芳香烴 / Polycyclic Aromatic Hydrocarbons (PAHs)				
Benzo[a]pyrene (CAS No.50-32-8)	參考AfPS GS 2019:01 PAK，以氣相層析儀/質譜儀分析。 / With reference to AfPS GS 2019:01 PAK. Analysis was performed by GC/MS.	mg/kg	0.2	n.d.
Benzo[e]pyrene (CAS No.192-97-2)		mg/kg	0.2	n.d.
Benzo[a]anthracene (CAS No.56-55-3)		mg/kg	0.2	n.d.
Benzo[b]fluoranthene (CAS No.205-99-2)		mg/kg	0.2	n.d.
Benzo[j]fluoranthene (CAS No.205-82-3)		mg/kg	0.2	n.d.
Benzo[k]fluoranthene (CAS No.207-08-9)		mg/kg	0.2	n.d.
Chrysene (CAS No.218-01-9)		mg/kg	0.2	n.d.
Dibenzo[a,h]anthracene (CAS No.53-70-3)		mg/kg	0.2	n.d.
Benzo[g,h,i]perylene (CAS No.191-24-2)		mg/kg	0.2	n.d.
Indeno[1,2,3-c,d]pyrene (CAS No.193-39-5)		mg/kg	0.2	n.d.
Anthracene (CAS No.120-12-7)		mg/kg	0.2	n.d.
Fluoranthene (CAS No.206-44-0)		mg/kg	0.2	n.d.
Phenanthrene (CAS No.85-01-8)		mg/kg	0.2	n.d.
Pyrene (CAS No.129-00-0)		mg/kg	0.2	0.298
Naphthalene (CAS No.91-20-3)		mg/kg	0.2	n.d.
Sum of 15 PAHs		mg/kg	-	0.298
Acenaphthene (CAS No.83-32-9)	參考AfPS GS 2019:01 PAK，以氣相層析儀/質譜儀分析。 / With reference to AfPS GS 2019:01 PAK. Analysis was performed by GC/MS.	mg/kg	0.2	n.d.
Fluorene (CAS No.86-73-7)		mg/kg	0.2	n.d.
Acenaphthylene (CAS No.208-96-8)		mg/kg	0.2	n.d.

備註(Note)：

1. mg/kg = ppm；0.1% = 1000 ppm
2. RL = Reporting Limit (報告極限值)
3. n.d. = Not Detected (未檢出) = Less than (小於) RL = Negative (陰性)
4. 本報告不得分離或擷錄使用。(The report is invalid if it is partly reproduced or used.)
5. "-" = Not Regulated (無規格值)

義成科技有限公司 (YIH CHERNG ENTERPRISE CO., LTD.)
臺南市關廟區中正路429號 (NO.429, ZHONGZHENG RD., GUANMIAO DIST., TAINAN CITY 718, TAIWAN (R.O.C.))

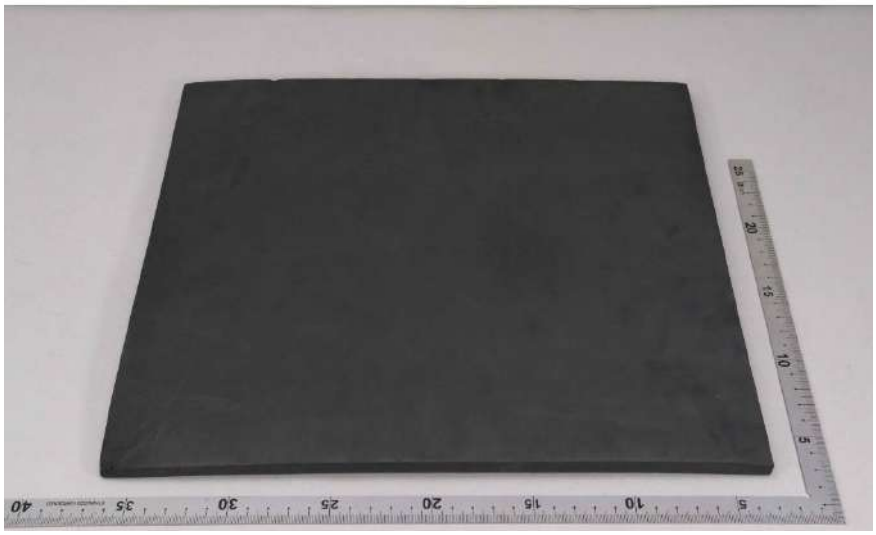
6. Negative = 未檢出 / 陰性 ; Positive = 檢出 / 陽性
7. 全氟辛烷磺酸及其鹽類包含CAS No.:29081-56-9, 2795-39-3, 29457-72-5, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7, 91036-71-4, 4021-47-0. (PFOS and its salts : CAS No.:29081-56-9, 2795-39-3, 29457-72-5, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7, 91036-71-4, 4021-47-0.)
8. 全氟辛酸及其鹽類包含CAS No.3825-26-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0. (PFOA and its salts: CAS No.3825-26-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0.)
9. (△): 此項目轉包予台灣檢驗科技股份有限公司材料暨工程實驗室-高雄進行測試。(The testing item(s) was/were subcontracted to SGS Taiwan Ltd. Material & Engineering Laboratory – Kaohsiung.)

測試報告
Test Report

義成科技有限公司 (YIH CHERNG ENTERPRISE CO., LTD.)
臺南市關廟區中正路429號 (NO.429, ZHONGZHENG RD., GUANMIAO DIST., TAINAN CITY 718, TAIWAN (R.O.C.))

*** 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.)

HKC23800038



**** 報告結尾 (End of Report) ****