

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

承 認 申 請 書

ROHS COMPLIANCE

客戶名稱: 香港商磐旭智能國際股份有限公司台灣分公司  
Customer  
廠商料號: RFA-25-AP532-70B-45  
Part No.  
品名: DB, L=45mm,IPEX  
Description  
圖號: RFA-25-AP532-70B-45  
Drawing No.  
客戶料號: 3422242000290M  
Drawing No.  
客戶品名: CBL,ANTENNA,ARISTOTLE,RFA-25-AP532-70B-45(未)  
45mm,IPEX1,24\*18\*0.6mm,FOR GT78V  
客戶規格: WIFI/BT(AP532-BT\_V1)

出廠簽章:

檢 查 TEST BY	核 對 CHECK BY	承 認 APPROVE BY
周沂珮	黃秋芳	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

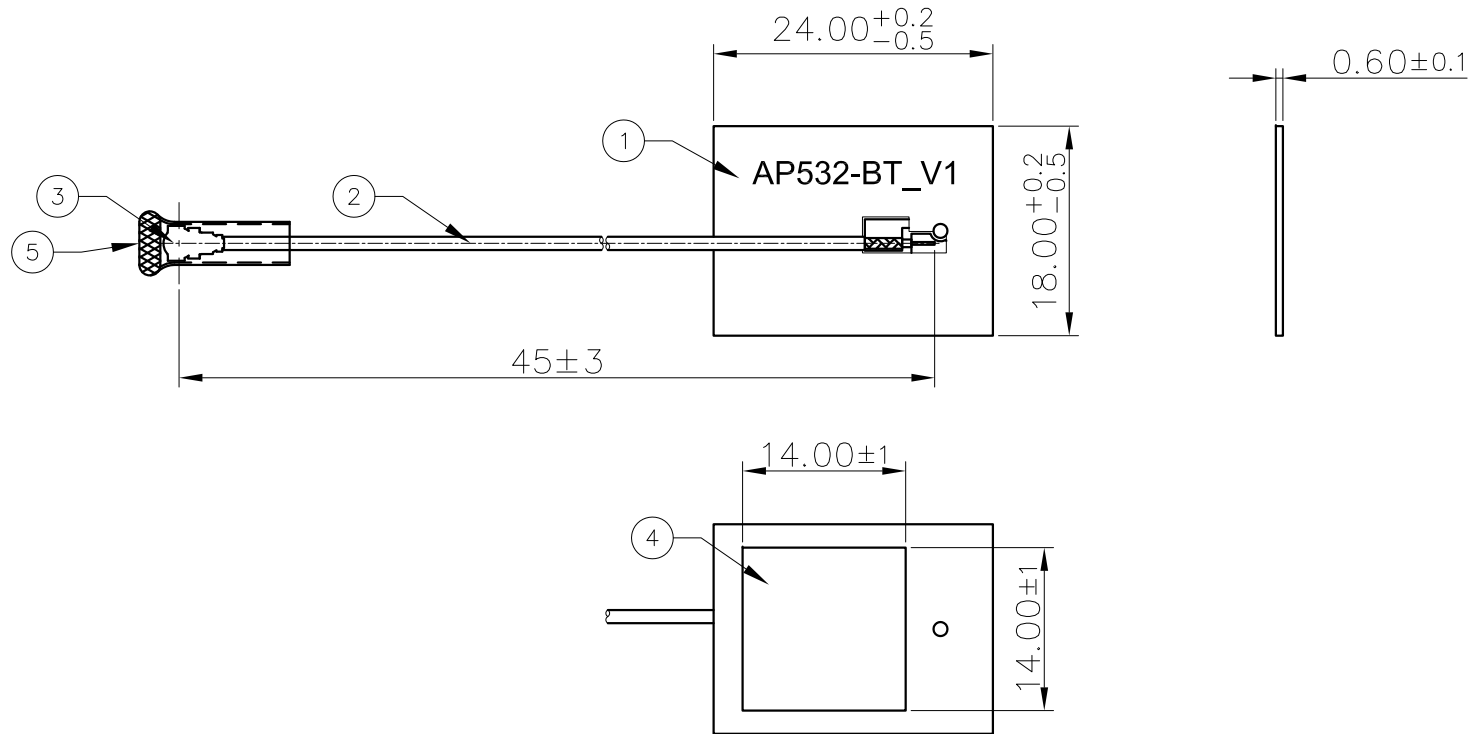
電話:02-2225-8209

傳真:02-2225-7523

表單編號: QP-0603-F02

版本: A

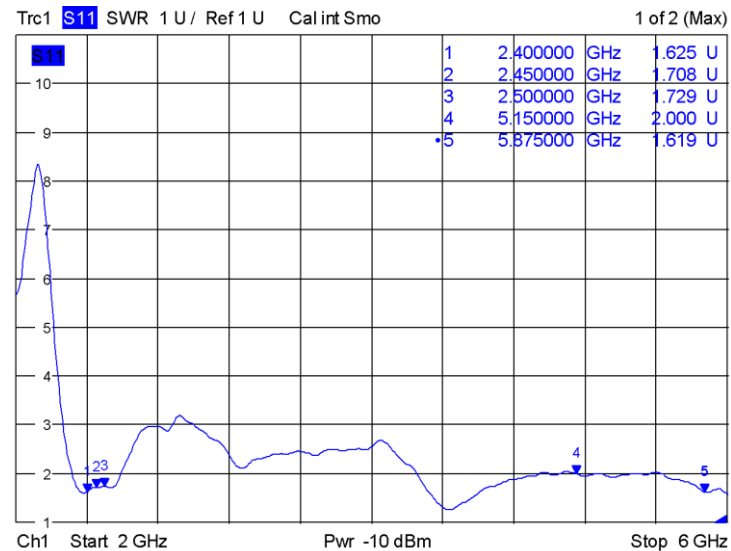
NO.	NAME	FINSH	MAT'L	Q'TY	MEMO
1.	PCB	BLACK	FR4	1	
2.	CABLE	BLACK	--	1	ø1.13
3.	CONNECTOR	PLATED GOLD	BRASS	1	IPEX
4.	TAPE	--	--	1	
5.	封口保護套	PARENT	PE	1	



	TOLERANCE UNLESS OTHERWISE SPECIFIED		亞驪企業股份有限公司 <b>ARISTOTLE ENTERPRISES INC.</b>	
	LINER	ANGLE		
	.X ±0.10	X° ±0.5°		
UNITS	.XX ±0.05		TITLE	
MM	.XXX ±0.01		RFA-25-AP532-70B-45	
REV.	ECN.	NAME	DATE	REV. C
1.				SHEET 1/1
				CHKD.
				SIZE SCALE
				DRAW Gino 2017/12/25
				DWG NO. RFA-25-AP532-70B-45

3.				REV.	C			
2.				SHEET	1/1	CHKD.		
1.				SIZE	SCALE			
REV.	ECN.	NAME	DATE	A4	1:1	DRAW	Gino	2017/12/25

Frequency (MHz)	3D			V+H Avg. Gain			V+H Peak Gain		
	Efficiency	Avg. Gain	Peak Gain	XY-plane	YZ-plane	ZX-plane	XY-plane	YZ-plane	ZX-plane
2400.00	41.46	-3.82	3.14	-4.63	-5.91	-2.15	0.12	-1.75	3.06
2450.00	43.31	-3.63	3.50	-4.39	-6.10	-2.01	0.82	-1.76	2.66
2500.00	41.98	-3.77	3.43	-4.65	-6.21	-2.12	0.59	-1.46	2.57
5150.00	65.04	-1.87	5.63	-6.31	-2.79	-2.39	-1.31	4.30	4.91
5350.00	69.98	-1.55	5.72	-5.96	-2.45	-1.94	-1.08	4.65	5.23
5475.00	67.62	-1.70	5.82	-5.89	-2.43	-2.16	-0.87	5.27	5.49
5600.00	60.81	-2.16	6.20	-6.09	-2.83	-2.69	-0.50	4.76	4.88
5725.00	66.79	-1.75	6.48	-5.70	-2.42	-2.37	0.80	4.73	5.07
5750.00	69.16	-1.60	6.68	-5.50	-2.13	-2.23	1.23	4.90	5.16
5825.00	70.98	-1.49	7.18	-4.95	-1.92	-2.19	2.05	5.19	5.38
5875.00	71.37	-1.46	7.22	-4.67	-2.06	-2.38	2.48	5.10	5.36

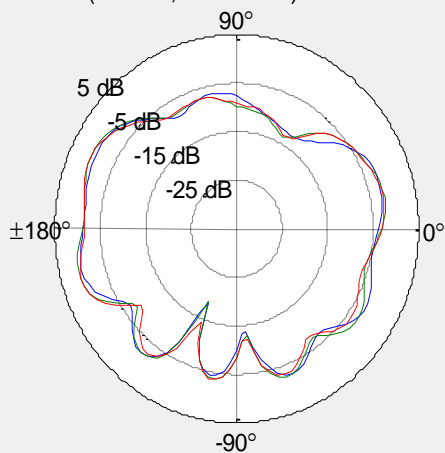


Date: 4.SEP.2017 17:54:33

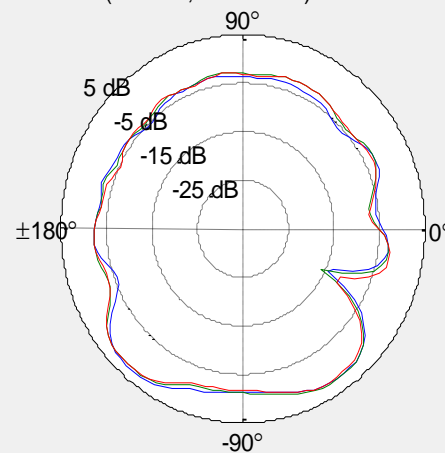
2G Band = 2400 - 2500 MHz % 2G Band

- 2400 MHz
- 2450 MHz
- 2500 MHz

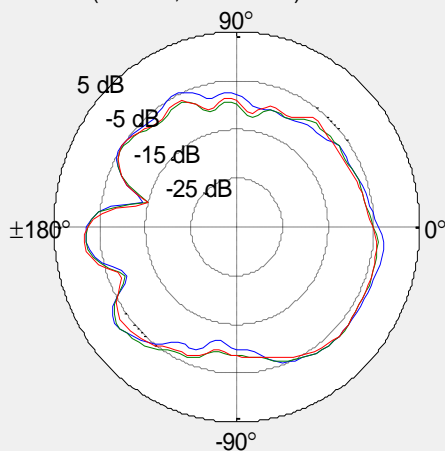
XY Plane (+X = 0°, +Y = +90°) / Elevation = 90 °



ZX Plane (+Z = 0°, +X = +90°) / Azimuth = 0 °



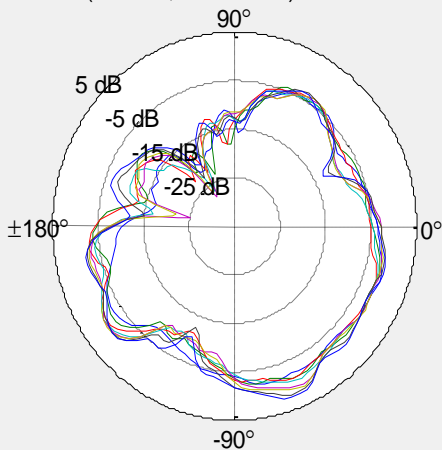
YZ Plane (+Z = 0°, +Y = +90°) / Azimuth = 90 °



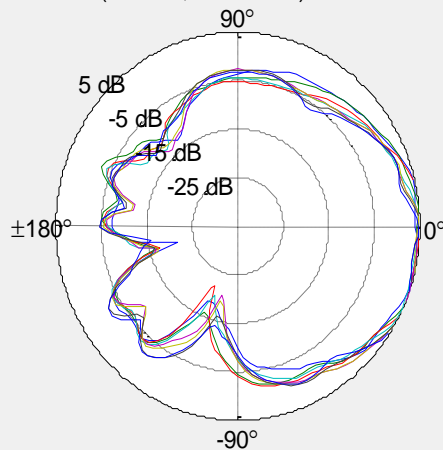
5G Band = 5150 - 5875 MHz % 5G Band

- 5150 MHz
- 5350 MHz
- 5475 MHz
- 5600 MHz
- 5725 MHz
- 5750 MHz
- 5825 MHz
- 5875 MHz

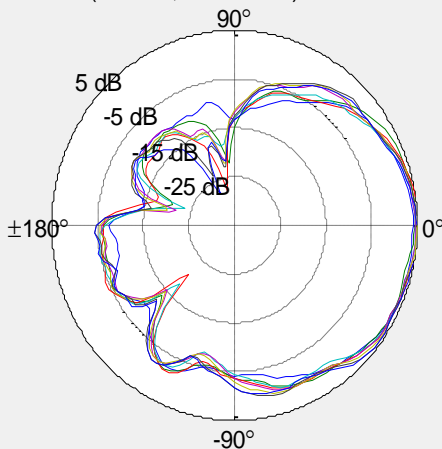
XY Plane (+X = 0°, +Y = +90°) / Elevation = 90 °



ZX Plane (+Z = 0°, +X = +90°) / Azimuth = 0 °



YZ Plane (+Z = 0°, +Y = +90°) / Azimuth = 90 °





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

**Glass cloth base epoxy resin  
 flame retardant copper clad laminate**

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

**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 <sup>9</sup>	10 <sup>6</sup> ↑	2.5.17
Surface resistivity	MΩ	C-96/35/90	5.0 x10 <sup>7</sup>	10 <sup>4</sup> ↑	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 x10" solder floating	10-14	6 ↑	2.4.8
Thermal stress	SEC	288 solder dipping	90 ↑	10 ↑	2.4.13.1
Glass transition temp		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	ppm/	TMA	50-70	N/A	2.4.24
Z-axis after Tg	ppm/	TMA	250-350		

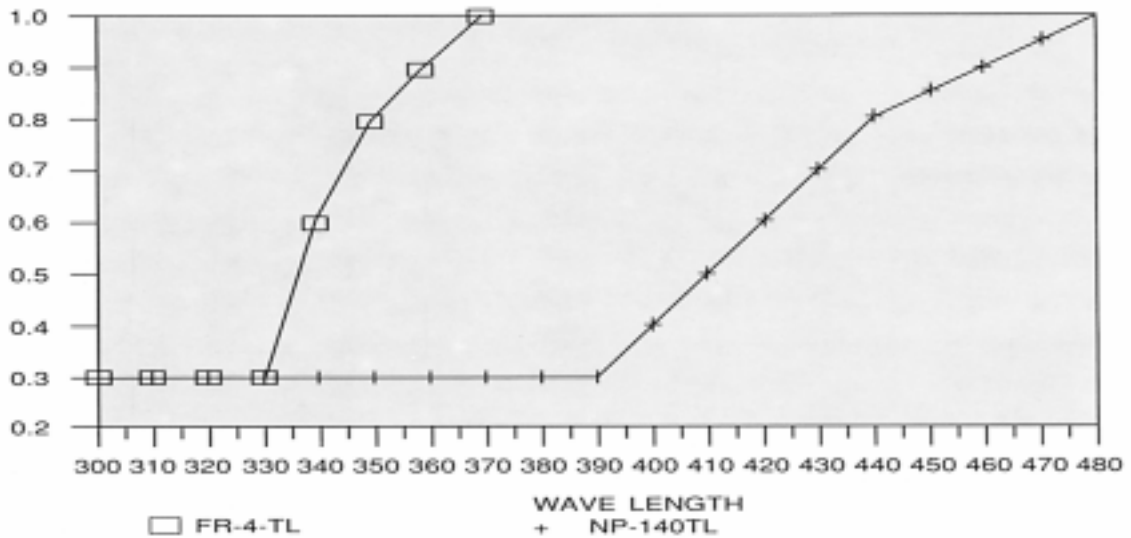
Data shown are nominal values for reference only.

**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		THICKNESS TOLERANCE
		INCH	mm	
0.004 (0.1)	0.5 (17)	48.8 x 36.6	1240 x 0930	CLASS C/M
to	1.0 (35)	48.8 x 40.5	1240 x 1030	
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

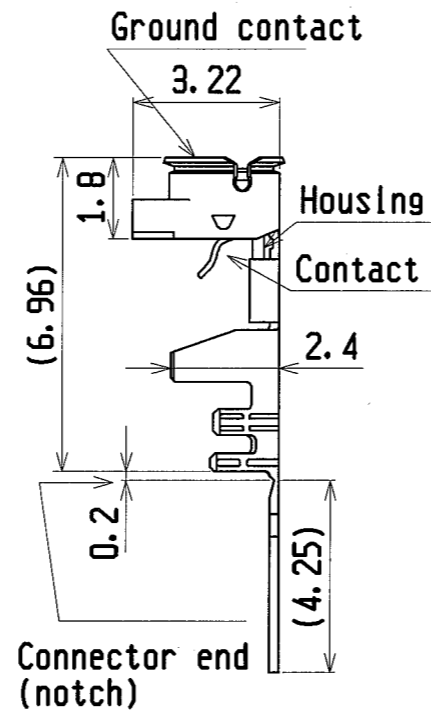
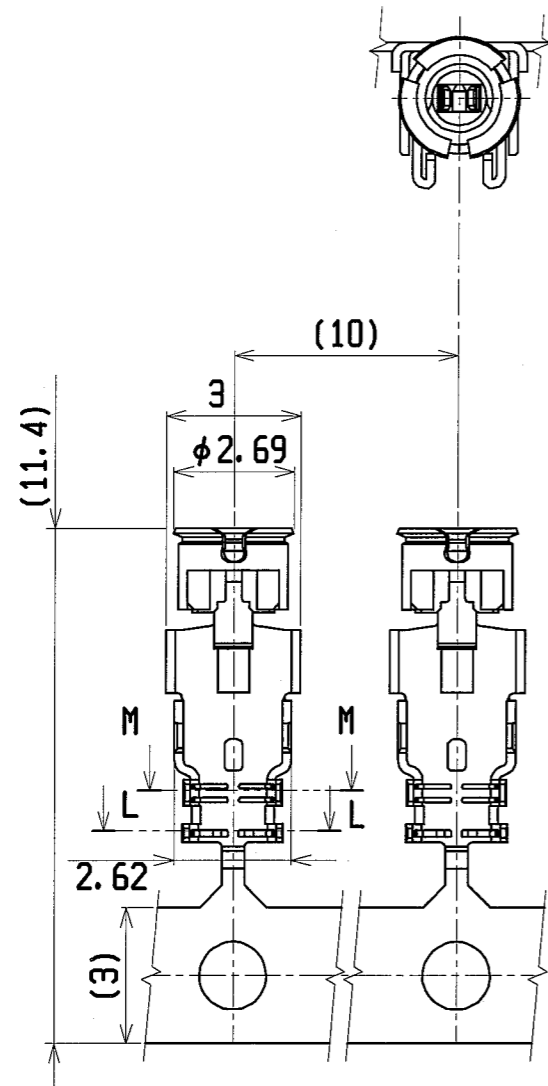
**■ CONSTRUCTION:**

THICKNESS		CONSTRUCTION	THICKNESS		CONSTRUCTION
mm	mil		mm	mil	
0.08	3	2112 1 ply	0.45	18	7628 x 2 + 1080 x 1
0.10	4	1080 2 plies	0.46	18	7667 2 plies
0.11	4	2116 1 ply	0.50	20	7628 3 plies
0.13	5	1080 2 plies	0.53	21	7628 3 plies
0.13sp	5	2116 1 ply	0.60	24	7628 3 plies
0.15	6	1506 1 ply	0.77	31	7628 4 plies
0.16	6	2112 2 plies	0.8	32	7628 4 plies
0.21	8	7628 1 ply	0.9	36	7628 5 plies
0.26	10	2116 2 plies	1.0	39	7628 5 plies
0.30	12	2116 3 plies	1.1	43	7628 6 plies
0.30sp	12	1506 2 plies	1.2	47	7628 6 plies
0.35	14	7628 2 plies			
0.38	15	7628 2 plies			

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

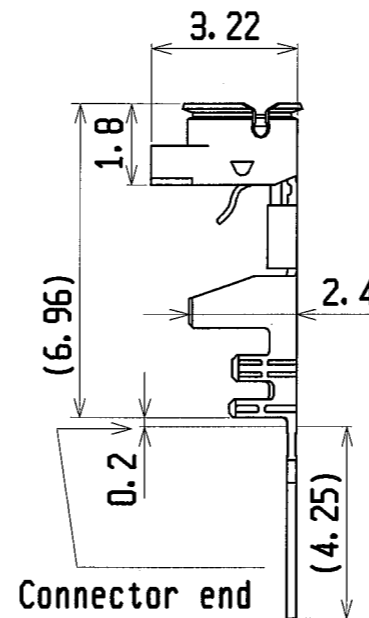


PART NO.  
20278-\*\*\*R-\*\*\*



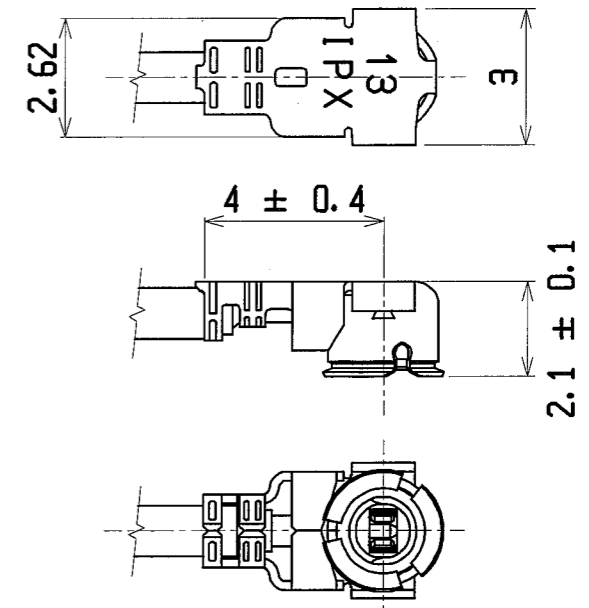
Part No. 20278-101R-08  
20278-102R-08  
20278-101R-13  
20278-102R-13  
20278-101R-32  
20278-102R-32

For hand tool  
(with notch)



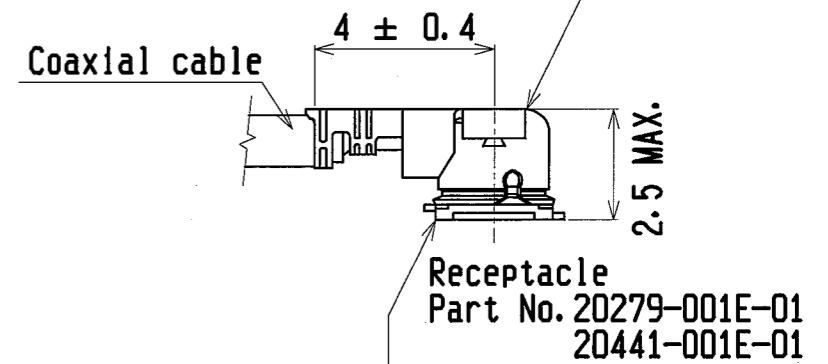
Part No. 20278-111R-08  
20278-112R-08  
20278-111R-13  
20278-112R-13  
20278-111R-32  
20278-112R-32

For semi auto  
termination machine  
(without notch)



Cable Ass'y

Plug  
P/N 20278-1\*\*R-08  
P/N 20278-1\*\*R-13  
P/N 20278-1\*\*R-32



MATING

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

19C	Z08056	K.O	Feb/04/08	EK	DESIGN'D BY	DATE
18C	Z07346	K.O	Jul/10/08	E.K	K. Ohbayashi	JUN/13/01
17C	Z05233	K.O	May/18/05	T.H	CHK'D BY	DATE
16C	Z05024	K.O	Jan/20/05	T.H		
15C	Z04398	K.O	Nov/12/04	T.H	APP'D BY	DATE
REV	ECN	BY	DATE	APP	K. Katabuchi	JUN/13/01
REV. RECORD					CUSTOMER	PROJECTION
SERIES No. 2814					COPY	6/1 mm

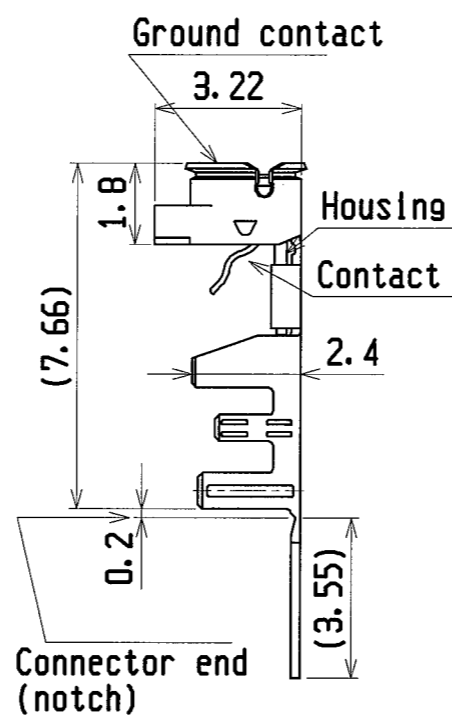
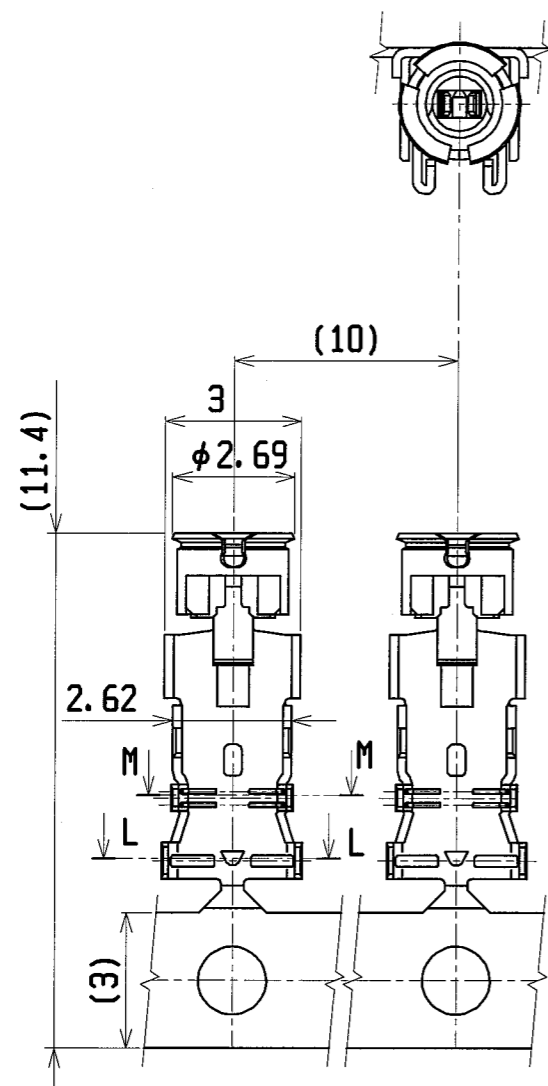
**I-PEX** Interconnect and Packaging Electronics TOKYO, JAPAN

TITLE: MHF series micro coaxial connector plug vertical (ground contact : gold plating)

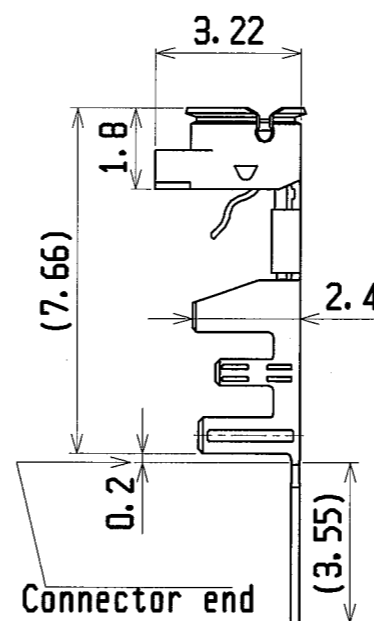
General

SCALE: 6/1 mm UNIT: mm DWG. No. 20278 SHEET: 1/4 REV. 19C

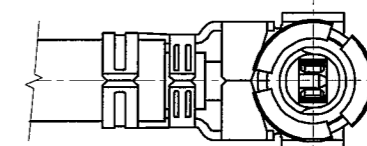
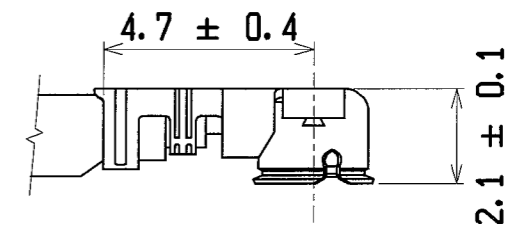
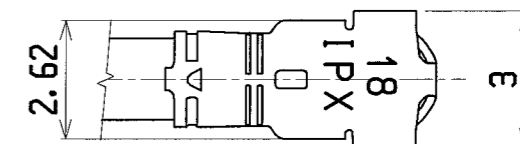
PART NO.  
20278-\*\*\*R-\*\*\*



Part No. 20278-101R-18  
20278-102R-18  
For hand tool  
(with notch)

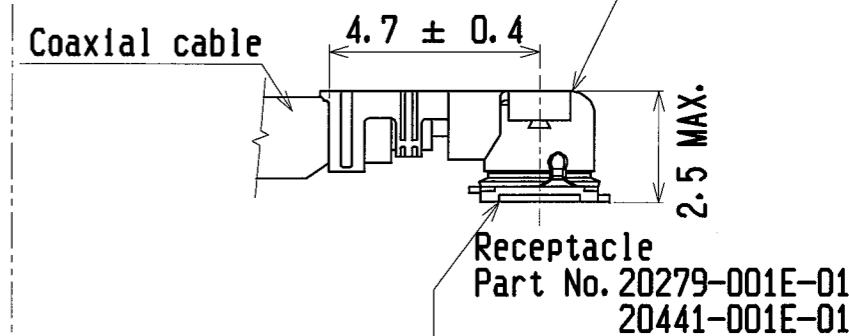


Part No. 20278-111R-18  
20278-112R-18  
For semi auto  
termination machine  
(without notch)




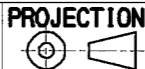
Cable Ass'y

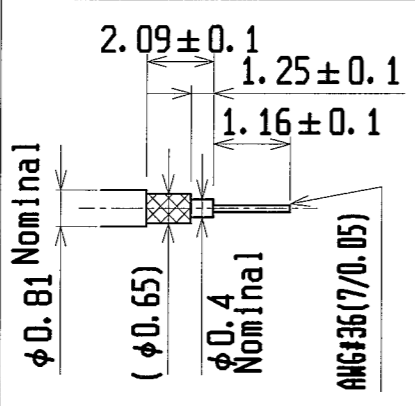
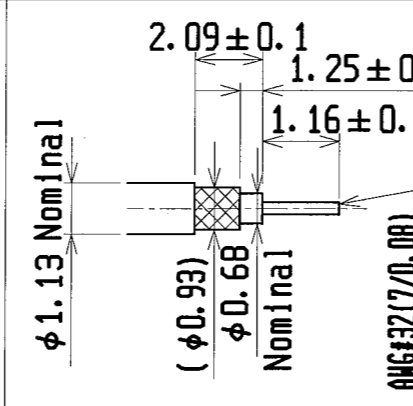
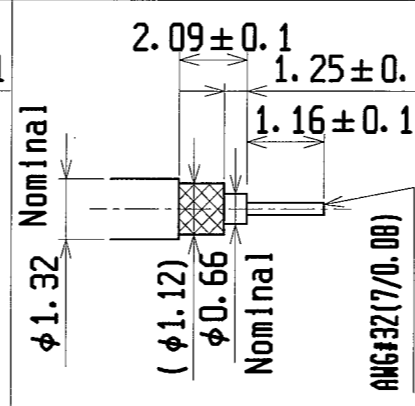
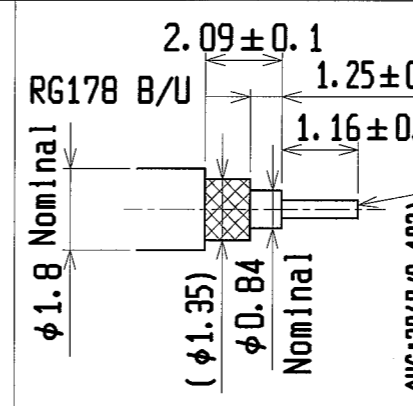
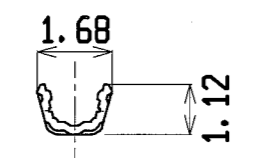
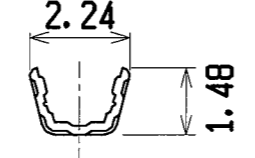
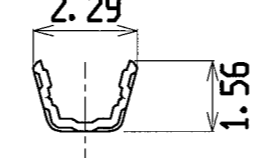
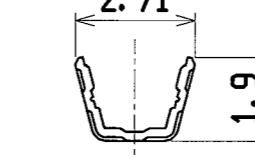
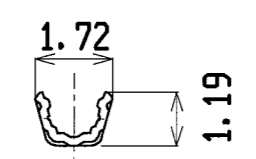
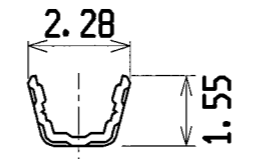
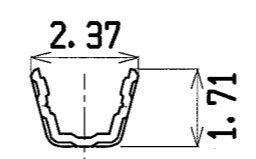
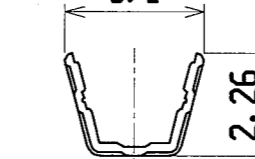
Plug  
P/N 20278-1\*\*R-18



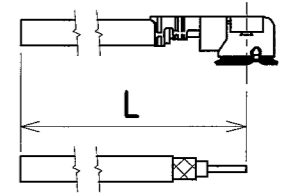
MATING

GENERAL TOLERANCE	
6 MAX.	±0.2
6 OVER MAX. 30	±0.3
30 OVER MAX. 120	±0.5
ANGLE	±2'

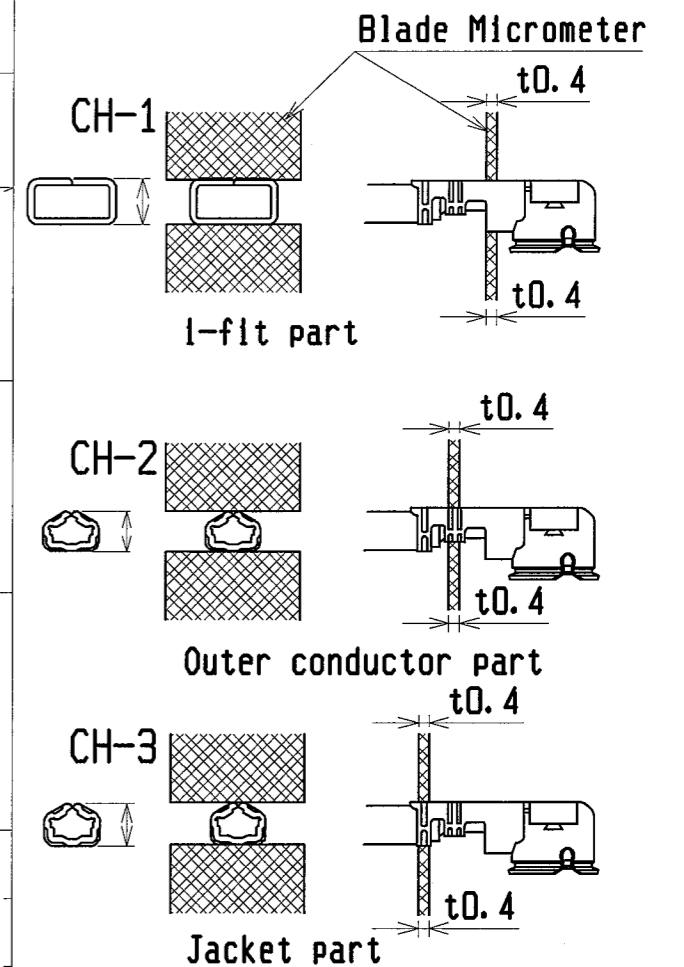
DESIGN D BY	DATE	 <b>I-PEX</b> Interconnect and Packaging Electronics TOKYO, JAPAN	TITLE MHF series micro coaxial connector plug vertical (ground contact : gold plating) General	
CHK' D BY	DATE			
APP' D BY	DATE			
REV ECN BY DATE APP	CUSTOMER COPY	PROJECTION	SCALE UNIT DWG. No.	SHEET REV.
SERIES No. 2814			6/1 mm 20278	2/4 19C

Part No. of non halogen free type	20278-101R-08 20278-111R-08	20278-101R-13 20278-111R-13	20278-101R-32 20278-111R-32	20278-101R-18 20278-111R-18	
Part No. of halogen free type	20278-102R-08 20278-112R-08	20278-102R-13 20278-112R-13	20278-102R-32 20278-112R-32	20278-102R-18 20278-112R-18	
Housing color	White	Black	Black	White	
Applicable cable nominal dimension	 $2.09 \pm 0.1$ $1.25 \pm 0.1$ $1.16 \pm 0.1$ $\phi 0.81$ Nominal $(\phi 0.65)$ $\phi 0.4$ Nominal AWG#36(7/0.05)	 $2.09 \pm 0.1$ $1.25 \pm 0.1$ $1.16 \pm 0.1$ $\phi 1.13$ Nominal $(\phi 0.93)$ $\phi 0.68$ Nominal AWG#32(7/0.08)	 $2.09 \pm 0.1$ $1.25 \pm 0.1$ $1.16 \pm 0.1$ $\phi 1.32$ Nominal $(\phi 1.12)$ $\phi 0.66$ Nominal AWG#32(7/0.08)	 $2.09 \pm 0.1$ $1.25 \pm 0.1$ $1.16 \pm 0.1$ $\phi 1.8$ Nominal RG178 B/U $(\phi 1.35)$ $\phi 0.84$ Nominal AWG#30(7/0.102)	
Braided shield of Outer conductor 外部導体の編組	Single / 1重編組	Single / 1重編組	Double / 2重編組	Single / 1重編組	
P/N of hand Tool	90187-008C	90187-013C	90187-032C	90233-018	
P/N of semi auto termination machine	90213-008C	90213-013C	90213-032C	90232-018	
Sect. M-M	 1.68 1.12	 2.24 1.48	 2.29 1.56	 2.71 1.9	
Sect. L-L	 1.72 1.19	 2.28 1.55	 2.37 1.71	 3.1 2.26	
Crimp Height	CH-1	1.34~1.40	1.34~1.40	1.34~1.40	1.34~1.40
	CH-2	0.76~0.84	1.06~1.14	1.20~1.30	1.41~1.49
	CH-3	0.85~0.97	1.15~1.35	1.26~1.46	1.70~1.80

Cable cut length




Crimp Height



NOTE-1

中心導体, 外部導体への半田コーティングは不可  
 Must not use solder coated  
 inner conductor and outer conductor.

DESIGN D BY	DATE	 <b>I-PEX</b> Interconnect and Packaging Electronics TOKYO, JAPAN	TITLE MHF series micro coaxial connector plug vertical (ground contact : gold plating)	General				
CHK' D BY	DATE							
APP' D BY	DATE							
REV	ECN	BY	DATE	APP	SCALE UNIT -/- mm	DWG. No. 20278	SHEET 3/4	REV. 19C
REV. RECORD SERIES No. 2814					CUSTOMER COPY	PROJECTION		

Notes

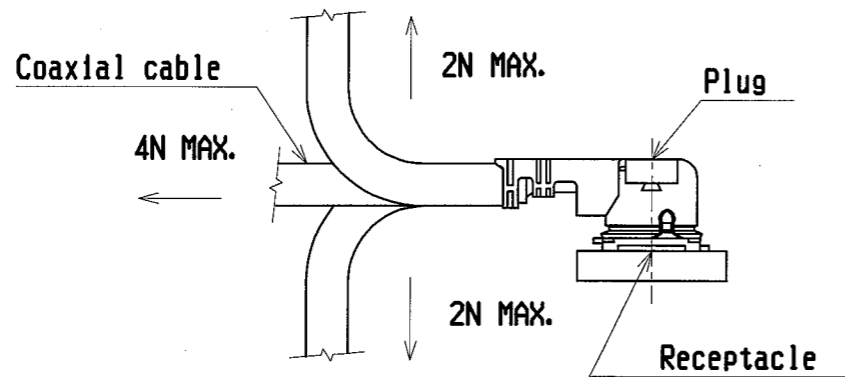
1. Material

- (1) Housing : PBT , UL94V-0
- (2) Contact  
phosphor bronze  
gold plating 0.1 $\mu$ m MIN.  
over nickel 1.27 $\mu$ m MIN.
- (3) Ground contact  
phosphor bronze  
gold plating 0.05 $\mu$ m MIN.  
over nickel 1.27 $\mu$ m MIN.

2. Packing : reel

3. Mating partner part No.  
: 20279-001E-01, 20441-001E-01

4. Permissible load of cable at mating



5. Suggestions for mating & unmating operation.

5-1 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.

1. 材料

- (1) ハウジング : PBT, UL94V-0
- (2) コンタクト  
りん青銅  
金メッキ0.1 $\mu$ m MIN.  
下地 ニッケル1.27 $\mu$ m MIN.
- (3) グランドコンタクト  
りん青銅  
金メッキ0.05 $\mu$ m MIN.  
下地 ニッケル1.27 $\mu$ m MIN.

2. 梱包 : リール

3. かん合相手 part No.  
: 20279-001E-01, 20441-001E-01

4. コネクタかん合後のケーブルに対する荷重

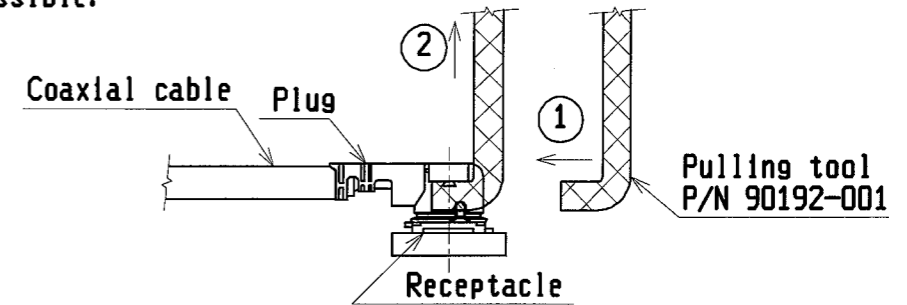
5. コネクタかん合時および抜去時の注意

5-1 コネクタ挿入時

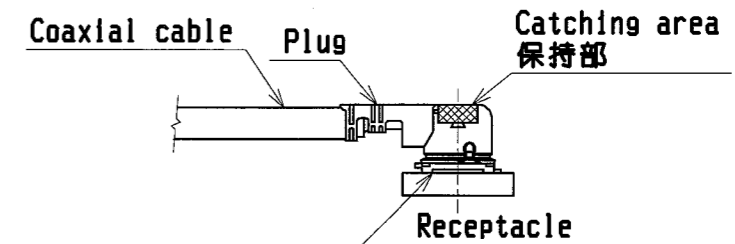
PlugとReceptacleのかん合軸を合わせ、できるだけ垂直に挿入して下さい。極端な斜め挿入は行わないで下さい。コネクタ破損の原因となりますので、過度なこじり挿入は行わないで下さい。

5-2 Unmating.

- (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.



- (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.



5-2 コネクタ抜去時

- (1) 抜去ジグを用いる場合  
下図のようにできるだけ垂直に引き抜いて下さい。

- (2) 手で直接引き抜く場合  
下図の保持部をつかみ、できるだけ垂直に引き抜いて下さい。

5-3 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)

5-4 Caution about Heat shrinkage tubes

Please be careful not to melt housing when using heat shrinkage tubes. It will become cause of open circuit.

6. This is 'Pb-free' connector.

5-3 外部導体はみ出し量


外部導体はみ出し量規定 : 外部導体トータル本数の10%以下 (外部導体パレルの外はみ出し量)

5-4 熱収縮チューブについての注意

熱収縮チューブで外部導体を覆う場合は、導通不良の原因となりますので、熱によりハウジングを溶融させないように注意してください。

6. 本コネクタは'Pb-free'である

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

DESIGN'D BY	DATE	 <b>I-PEX</b> Interconnect and Packaging Electronics TOKYO, JAPAN	TITLE MHF series micro coaxial connector plug vertical (ground contact : gold plating)	General	
CHK'D BY	DATE				
APP'D BY	DATE				
REV	ECN	BY	DATE	APP	SCALE UNIT DWG. No. SHEET REV. --- mm 20278 4/4 19C
REV. RECORD SERIES No. 2814					CUSTOMER COPY PROJECTION

# SPECIFICATION FOR APPROVAL

DOCUMENT: A3132TS001

---

STYLE : COAXIAL CABLE  
105°C 30V

---

SIZE: 32AWG×1C  
BRAID : TD

---

RECOGNIZED: UL 1979  
MEET VW-1

---



**WONDERFUL HI-TECH CO.,LTD.**

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

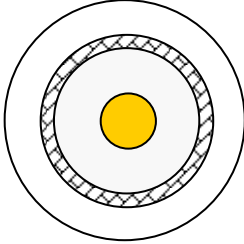
FACTORY : 17 PEI YUAN ROAD,  
CHUNG-LI IND. PARK  
TAIWAN, R.O.C.

TEL : (02)22988033  
FAX : (02)22988031-2

TEL : (03)4527777  
FAX : (03)4517214



# WONDERFUL HI-TECH CO., LTD. SPECIFICATION

STYLE	105°C 30V UL 1979	DOCUMENT NO : A3132TS001	
SIZE	32AWG	ESTABLISHED DATE: Mar/16/2005	
STANDARD :			
Conductor	Size	AWG	32
	Material	----	Silver Cover Copper
	Conductors No.	----	7
	Conductors Size	mm	0.085
	O.D.	mm	0.26
Insulation	Average Thickness	mm	0.22
	Diameter	mm	$0.70 \pm 0.03$
	Material	----	FEP
	Color	----	Clear
Braid	Material	----	Tinned Copper
	Construction	mm	16 / 4 / 0.050
	Coverage	%	89.4
Jacket	Average Thickness	mm	0.12
	Diameter	mm	$1.13 \pm 0.05$
	Material	----	FEP
	Color	----	According to customer
Marking	Non		
Drawing			



# WONDERFUL HI-TECH CO., LTD.

## SPECIFICATION

Electrical & Physical Properties					
Item		32AWG			
Rating Temp Voltage		105°C 30V			
Conductor Resistance		497 OHM/KM/20°C MAX.			
Insulation Resistance		3000 MEGA OHM-KM MIN.			
Dielectric Strength		AC 1000 V/Minute			
Spark Test		2 KV			
Insulation	Unaged	Tensile Strength	2500 PSI MIN.( 1.76 Kg / m m <sup>2</sup> )		
		Elongation	200% MIN.		
	Aged	Tensile Strength	UNAGED MIN. 75%(168HRS×232°C)		
		Elongation	UNAGED MIN. 75%(168HRS×232°C)		
Jacket	Unaged	Tensile Strength	2500 PSI MIN.( 1.76 Kg / m m <sup>2</sup> )		
		Elongation	200% MIN.		
	Aged	Tensile Strength	UNAGED MIN.75%(168HRS×232°C)		
		Elongation	UNAGED MIN.75%(168HRS×232°C)		
Nom. Impedance		50 ± 3 Ohms			
Nom. Capacitance		96 ± 3 pF/m			
Nom. Vel. of Prop.		69%			
Storage Temperature		-40°C ~+80°C			
VSWR Test (0 – 6 GHZ)		Max 1.3			
Flame Test		VW-1 OK			
Attenuation (dB/1m)	2.0GHZ	2.4GHZ	2.5GHZ	5.0GHZ	6.0 GHZ
	2.90	3.20	3.28	5.05	5.40



## 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:**

<b>Product Number</b>	<b>Adhesive<sup>1</sup>/ Color/ Tape Thickness</b>	<b>Carrier</b>	<b>Liner Color, Type, Print</b>	<b>Liner Caliper</b>
9888T	Translucent, 0.0059" (0.150mm)	Tissue translucent in color	White, PE <sup>2</sup> 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
<b>Adhesion to stainless steel</b> ASTM D3330 –180 degree, 2 mil Al foil at 22°C, 50%RH 15 minute RT 72 Hour RT	g/25.4m  2940 3180
<b>Adhesion to ABS</b> ASTM D3330 –180 degree, 2 mil Al foil at 22°C, 50%RH 15 minute RT 72 Hour RT	2210 2440
<b>Adhesion to PC</b> ASTM D3330 –180 degree, 2 mil Al foil at 22°C, 50%RH 15 minute RT 72 Hour RT	2560 2670
<b>Adhesion to PP</b> ASTM D3330 –180 degree, 2 mil Al foil at 22°C, 50%RH 20 minute RT 72 Hour RT	1900 2190

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

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3M MAKES NO WARRANTIES, EXPRESS OR IMPLIED, 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.

# ZHI YAN ELECTRONICS CO., LTD

11F.-8, No.109, Sec1, Jhongshan Rd, Sinjhuang City,  
Taipei County 242, Taiwan (R.O.C)  
TEL(886)2-8522-7261 FAX(886)2-8522-7265

## PRODUCT SPECIFICATION

01 . JAN . 2006

1st Edition

### 1. Scope

This specification covers the requirements for Flexible Polyolefin  
Tubing used for Vlotage 600V  
Temperature 100°C rating

### 2. STANDARD SIZE

Nominal Size (mm)	Size as supplies (mm)		Standard
	Inside	Wall	Length
	Diameter	Thickness	(M)
2.4	2.4 ± 0.1	0.2 ± 0.05	300
2.5	2.5 ± 0.1	0.2 ± 0.05	300
2.7	2.7 ± 0.1	0.2 ± 0.05	300
2.9	2.9 ± 0.1	0.2 ± 0.05	300
3.0	3.0 ± 0.1	0.2 ± 0.05	300
3.1	3.1 ± 0.1	0.2 ± 0.05	300
3.3	3.3 ± 0.1	0.2 ± 0.05	300
3.4	3.4 ± 0.1	0.2 ± 0.05	300
3.6	3.6 ± 0.1	0.2 ± 0.05	300
6.0	6.0 ± 0.2	0.6 ± 0.10	100

### 3. Physical / Electrical

ITEM		UNIT	STANDARD	SPECIFICATIONS
Insulation	Tensile Strength	kg/mm <sup>2</sup>	20"/min	Min. 1.00
	Elongation	%		Min. 200
Longitude Change		%	200°C x 3min	Max. 15
Specific gravity				0.94
Water absorption		%		Max. 0.3
Volume Resistivity			Ω-CM	Min.10 <sup>14</sup>
Dielectric strength		KV		Min. 2.5

### 4. MARKING : NON



### 5. PACKING

This standard length given in the Construction table. Other length are available upon special need  
not to be damaged during transporting and storage.

# ZHIYAN ELECTRONICS CO., LTD

## 1. SCOPE

THIS SPECIFICATION COVERS TUBE LP-C .

## 2. FEATURE

LP-C IS NOT AN IRRADIATED CROSS-LINKED , COMMERCIAL GRADE VERY FLEXIBLE POLYOLEFIN TUBING .

## 3. COLOR

STANDARDS COLORS : CLEAR .

## 4. STANDARD SIZES

STANDARD SIZES SHALL BE SPECIFIED IN TABLE 1 .

## 5. TEST METHOD

### 1.) INSIDE DIAMETER

INSIDE DIAMETER SHALL BE MEASURED BY A METAL GAGE ROD OR A METAL TAPER GAGE WHICH HAS INTERVAL OR GRADUATION .

IN CASE OF USING A GAGE ROD : READ THE VALUE OF THE MAXIMUM GAGE ROD WHICH SHALL PASS FREELY INTO THE TUBING WITHOUT EXPANDING THE WALL OF TUBING .

IN CASE OF USING A TAPER GAGE : READ THE VALUE ON THE GAGE WHEN THE TUBING ISN'T EXPANDED BY INSERTION AND THERE IS NO VISIBLE SPACE BETWEEN THE END OF TUBING AND THE TAPER GAGE .

### 2.) WALL THICKNESS

WALL THICKNESS SHALL BE MEASURED BY A PIN-DIALGAGE OR A MICROMETER AT SEVERAL POINTS .



RoHS REPORT INDEX

	NAME	供應商	RoHS report
1.	PCB	南亞塑膠工業股份有限公司	CE/2017/C0524
2.	IPEX		
2-1	HOUSING	DAI-ICHI SEIKO CO., LTD.	CE/2017/82435A
2-2	CONTACT	DAI-ICHI SEIKO CO., LTD.	CE/2017/C3496
2-3	GROUND CONTACT	DAI-ICHI SEIKO CO., LTD.	CE/2017/C3495
2-4	PLATING	DAI-ICHI SEIKO CO., LTD.	CE/2017/C3499
3.	Cable		
3-1	外被	WONDERFUL HI-TECH CO., LTD.	TWNC00660407
3-2	金屬線	WONDERFUL HI-TECH CO., LTD.	TWNC00660409
3-3	FEP	大金氟化工(中国)有限公司	SHAEC1716150902
4.	背膠	台灣明尼蘇達礦業製造股份有限公司	CE/2017/11010
5.	IPEX 保護套	威萬有限公司	ECL01J081203002E

## 測試報告

## Test Report

號碼(No.) : CE/2017/C0524

日期(Date) : 2017/12/15

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南亞塑膠工業股份有限公司(台灣) / NAN YA PLASTICS CORPORATION (TAIWAN)

(南亞電子材料(昆山)有限公司 / NAN YA ELECTRONIC MATERIALS (KUNSHAN) CORP., LTD.)

(南亞電子材料(惠州)有限公司 / NAN YA ELECTRONIC MATERIALS (HUIZHOU) CORP., LTD.)

台灣台北市敦化北路201號 / 201 TUNG HWA NORTH ROAD, TAIPEI, TAIWAN

(江蘇省昆山昆山市長江南路201號 / 201 CHANG JIANG ROAD(S) KUNSHAN ECONOMIC & TECHNICAL DEVELOPMENT ZONE, JIANG SU)

(廣東省惠州市博羅縣石灣鎮永石大道 / 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/on behalf of 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 Description)	:	LAMINATE (UL E98983)
樣品型號(Style/Item No.)	:	NP-140R/NP-140TL
買主/訂單號碼(Buyer/Order No.)	:	7A10213
收件日期(Sample Receiving Date)	:	2017/12/04
測試期間(Testing Period)	:	2017/12/04 TO 2017/12/13

### 測試需求(Test Requested) :

- (1) 依據客戶指定, 參考RoHS2011/65/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指令暨(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 and amending Directive (EU) 2015/863.)

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



# 測試報告

## Test Report

號碼(No.) : CE/2017/C0524

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南亞塑膠工業股份有限公司(台灣) / NAN YA PLASTICS CORPORATION (TAIWAN)

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(廣東省惠州市博羅縣石灣鎮永石大道 / YONGSHI BOULEVARD SHIWAN TOWN BOLUO COUNTY HUIZHOU CITY GUANG DONG)



### 測試結果(Test Results)

測試部位(PART NAME)No. 1 : 銅色板子 (COPPER COLORED SHEET)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	限值 (Limit)
			No. 1	No. 1	
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321-5 (2013), 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n. d.	100
鉛 / Lead (Pb)	mg/kg	參考IEC 62321-5 (2013), 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	4.47	1000
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4 (2013), 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-4 (2013) and performed by ICP-AES.	2	n. d.	1000
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考IEC 62321-7-2 (2017), 以UV-VIS檢測. / With reference to IEC 62321-7-2 (2017) and performed by UV-VIS.	8	n. d.	1000
鈹 / Beryllium (Be)	mg/kg	參考US EPA 3052 (1996), 以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.	2	n. d.	-
氧化鈹 / Beryllium oxide (BeO)**	mg/kg	參考US EPA 3052 (1996), 以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES. **	-	n. d.	-
六溴環十二烷及所有主要被辨別出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	參考IEC 62321 (2008), 以氣相層析/質譜儀檢測. / With reference to IEC 62321 (2008). Analysis was performed by GC/MS.	5	n. d.	-

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# 測試報告

## Test Report

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(廣東省惠州市博羅縣石灣鎮永石大道 / YONGSHI BOULEVARD SHIWAN TOWN BOLUO COUNTY HUIZHOU CITY GUANG DONG)



測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
聚氣乙烯 / PVC	**	以紅外光譜分析及焰色法檢測. / Analysis was performed by FTIR and FLAME Test.	-	Negative	-
砷 / Arsenic (As) (※2)	mg/kg	參考SGS內部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.	50	n. d.	-
五氧化二砷 / Diarsenic pentaoxide*** (CAS No. : 1303-28-2)	mg/kg	參考SGS內部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.***	-	n. d.	-
三氧化二砷 / Diarsenic trioxide*** (CAS No. : 1327-53-3)	mg/kg		-	n. d.	-
硼 / Boron (B) (※2)	mg/kg	參考SGS內部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.	50	n. d.	-
硼酸 / Boric acid*** (CAS No. : 10043-35-3; 11113-50-1)	mg/kg	參考SGS內部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.***	-	n. d.	-
無水四硼酸二鈉 / Disodium tetraborate, anhydrous*** (CAS No. : 1303-96-4, 1330-43-4, 12179-04-3)	mg/kg		-	n. d.	-
水合硼酸鈉 / Tetraboron disodium heptaoxide, hydrate (CAS No. : 12267-73-1) (*2)	mg/kg		-	n. d.	-
三丁基錫 / Tributyl Tin (TBT)	mg/kg	參考ISO 17353 (2004), 以氣相層析儀/火焰光度偵測器檢測. / With reference to ISO 17353 (2004). Analysis was performed by GC/FPD.	0.03	n. d.	-
三苯基錫 / Triphenyl Tin (TphT)	mg/kg		0.03	n. d.	-
二丁基錫 / Dibutyl Tin (DBT)	mg/kg		0.03	n. d.	-
二辛基錫 / Dioctyl Tin (DOT)	mg/kg		0.03	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
全氟辛酸磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	參考US EPA 3550C (2007), 以液相層析/質譜儀檢測。 / With reference to US EPA 3550C (2007). Analysis was performed by LC/MS.	10	n. d.	-
全氟辛酸 / PFOA (CAS No. : 335-67-1)	mg/kg		10	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)	mg/kg	參考US EPA 3550C (2007), 以氣相層析/質譜儀檢測。 / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	5	n. d.	-
二氯化鈷 / Cobalt dichloride (CAS No. : 7646-79-9)	mg/kg	參考SGS內部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測。 / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.	50	n. d.	-
多氯聯苯 / Polychlorinated Biphenyls (PCBs) (CAS No. : 1336-36-3)	mg/kg	參考US EPA 3550C (2007), 以氣相層析/質譜儀檢測。 / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	0.5	n. d.	-
多氯萘 / Polychlorinated Naphthalene (PCNs)	mg/kg		5	n. d.	-
多氯三聯苯 / Polychlorinated Terphenyls (PCTs)	mg/kg		0.5	n. d.	-
短鏈氯化石蠟 / Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (CAS No. : 85535-84-8)	mg/kg		100	n. d.	-
雙(2-甲氧基乙基)醚 / Bis(2-methoxyethyl) ether (CAS No. : 111-96-6)	mg/kg	參考US EPA 3550C (2007), 以氣相層析/質譜儀檢測。 / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	10	n. d.	-
N,N-二甲基乙醯胺 / N,N-dimethylacetamide (DMAC) (CAS No. : 127-19-5)	mg/kg		10	n. d.	-
乙二醇二甲醚 / Ethylene glycol dimethyl ether (EGDME) (CAS No. : 110-71-4)	mg/kg		10	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
			-	n. d.	1000
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321-6 (2015), 以氣相層析/質譜儀檢測. / With reference to IEC 62321-6 (2015) and performed by GC/MS.	-	n. d.	1000
一溴聯苯 / Monobromobiphenyl	mg/kg		5	n. d.	-
二溴聯苯 / Dibromobiphenyl	mg/kg		5	n. d.	-
三溴聯苯 / Tribromobiphenyl	mg/kg		5	n. d.	-
四溴聯苯 / Tetrabromobiphenyl	mg/kg		5	n. d.	-
五溴聯苯 / Pentabromobiphenyl	mg/kg		5	n. d.	-
六溴聯苯 / Hexabromobiphenyl	mg/kg		5	n. d.	-
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n. d.	-
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n. d.	-
九溴聯苯 / Nonabromobiphenyl	mg/kg		5	n. d.	-
十溴聯苯 / Decabromobiphenyl	mg/kg		5	n. d.	-
多溴聯苯醚總和 / Sum of PBDEs	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.	-	
富馬酸二甲酯 / Dimethyl Fumarate (CAS No. : 624-49-7)	mg/kg	參考US EPA 3550C (2007), 以氣相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	0.1	n. d.	-
磷酸三(2-氯乙基)酯 / Tris (2-chloroethyl) phosphate (TCEP) (CAS No. : 115-96-8)	mg/kg	參考US EPA 3550C (2007), 以氣相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	5	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	限值 (Limit)
				No. 1	
磷酸三(1-氯-2-丙基)酯 / Tris(1-chloro-2-propyl) phosphate (TCPP) (CAS No. : 13674-84-5)	mg/kg	參考US EPA 3550C (2007), 以氣相層析/質譜儀檢測。 / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	5	n. d.	-
磷酸三(1,3-二氯異丙基)酯 / Tris(1,3-dichloro-2-propyl)phosphate (TDCPP) (CAS No. : 13674-87-8)	mg/kg	參考US EPA 3550C (2007), 以氣相層析/質譜儀檢測。 / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	5	n. d.	-
磷酸三(二甲苯)酯 / Trixylyl phosphate (TXP) (CAS No. : 25155-23-1)	mg/kg	參考US EPA 3550C (2007), 以氣相層析/質譜儀檢測。 / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	25	n. d.	-
對特辛基苯酚 / 辛基酚 / 4-(1,1,3,3-tetramethylbutyl) phenol, (4-tert-Octylphenol) (CAS No. : 140-66-9)	mg/kg	參考US EPA 3550C (2007), 以液相層析/質譜儀檢測。 / With reference to US EPA 3550C (2007). Analysis was performed by LC/MS.	10	n. d.	-
<b>石棉 / Asbestos</b>					
陽起石綿 / Actinolite (CAS No. : 77536-66-4)	%	參考EPA 600/R-93/116 (1993) / 立體顯微鏡 (SM), 分散染色式偏光顯微鏡 (DS-PLM)及X光繞射光譜分析法 (XRD) / 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	-
鐵石綿(褐石綿) / Amosite (CAS No. : 12172-73-5)	%		-	Negative	-
斜方角閃石綿 / Anthophyllite (CAS No. : 77536-67-5)	%		-	Negative	-
溫石綿(白石綿) / Chrysotile (CAS No. : 12001-29-5)	%		-	Negative	-
青石綿 / Crocidolite (CAS No. : 12001-28-4)	%		-	Negative	-
透閃石綿 / Tremolite (CAS No. : 77536-68-6)	%	-	Negative	-	
過氯酸鹽 / Perchlorate (CAS No. : 14797-73-0)	mg/kg	以離子層析儀檢測。 / Analysis was performed by IC.	0.006	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	限值 (Limit)
				No. 1	
偶氮 (AZO)					
1): 4-氨基二苯 / 4-AMINODIPHENYL (CAS No. : 92-67-1)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
2): 聯苯胺 / BENZIDINE (CAS No. : 92-87-5)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
3): 4-氯鄰甲苯胺 / 4-CHLORO-O-TOLUIDINE (CAS No. : 95-69-2)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
4): 2-萘胺 / 2-NAPHTHYLAMINE (CAS No. : 91-59-8)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
5): 鄰氨基二甲基偶氮 / O-AMINOAZOTOLUENE (CAS No. : 97-56-3)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
6): 對硝基鄰甲苯胺 / 2-AMINO-4-NITROTOLUENE (CAS No. : 99-55-8)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
7): 對氯苯胺 / P-CHLOROANILINE (CAS No. : 106-47-8)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
8): 4-甲氧基-間苯二胺 / 2,4-DIAMINOANISOLE (CAS No. : 615-05-4)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
9): 4,4'-二氨基二苯甲烷 / 4,4'-DIAMINODIPHENYLMETHANE (CAS No. : 101-77-9)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
10): 3,3'-二氯聯苯胺 / 3,3'-DICHLOROBENZIDINE (CAS No. : 91-94-1)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-

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(廣東省惠州市博羅縣石灣鎮永石大道 / YONGSHI BOULEVARD SHIWAN TOWN BOLUO COUNTY HUIZHOU CITY GUANG DONG)



測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	限值 (Limit)
				No. 1	
11): 3,3'-二甲氧基聯苯胺 / 3,3'-DIMETHOXYBENZIDINE (CAS No. : 119-90-4)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
12): 3,3'-二甲基聯苯胺 / 3,3'-DIMETHYLBENZIDINE (CAS No. : 119-93-7)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
13): 3,3'-二甲基-4,4'-二氨基二苯甲烷 / 3,3'-DIMETHYL-4,4'-DIAMINODIPHENYLMETHANE (CAS No. : 838-88-0)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
14): 2-甲氧基-5-甲基聯苯 / P-CRESIDINE (2-METHOXY-5-METHYLANILINE) (CAS No. : 120-71-8)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
15): 4,4'-亞甲基雙(氯苯胺) / 4,4'-METHYLENE-BIS-(2-CHLOROANILINE) (CAS No. : 101-14-4)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
16): 4,4'-氧化雙苯胺 / 4,4'-OXYDIANILINE (CAS No. : 101-80-4)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
17): 4,4'-硫代雙苯胺 / 4,4'-THIODIANILINE (CAS No. : 139-65-1)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
18): 鄰甲苯胺 / O-TOLUIDINE (CAS No. : 95-53-4)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
19): 2,4-二氨基甲苯 / 2,4-TOLYLENEDIAMINE (CAS No. : 95-80-7)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
20): 2,4,5-三甲基苯胺 / 2,4,5-TRIMETHYLANILINE (CAS No. : 137-17-7)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-

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# 測試報告

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南亞塑膠工業股份有限公司(台灣) / NAN YA PLASTICS CORPORATION (TAIWAN)

(南亞電子材料(昆山)有限公司 / NAN YA ELECTRONIC MATERIALS (KUNSHAN) CORP., LTD.)

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	限值 (Limit)
				No. 1	
21): 鄰位甲氧基苯胺 / O-ANISIDINE (CAS No. : 90-04-0)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
22): 對氨基偶氮苯 / 4-AMINOAZOBENZENE (CAS No. : 60-09-3)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
23): 2,4-二甲基苯胺 / 2,4-XYLIDINE (CAS No. : 95-68-1)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
24): 2,6-二甲基苯胺 / 2,6-XYLIDINE (CAS No. : 87-62-7)	mg/kg	參考LFGB 82.02-2 (2013), 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS.	3	n. d.	-
<b>氫氟碳化物 / HFCs (Hydrofluorocarbon)</b>					
氫氟碳化物 (HFC)-23 (CHF3) (CAS No. : 75-46-7)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氫氟碳化物 (HFC)-32 (CH2F2) (CAS No. : 75-10-5)	mg/kg		1	n. d.	-
氫氟碳化物 (HFC)-41 (CH3F) (CAS No. : 593-53-3)	mg/kg		1	n. d.	-
氫氟碳化物 (HFC)-43-10mee (C5H2F10)	mg/kg		1	n. d.	-
氫氟碳化物 (HFC)-125 (C2HF5)	mg/kg		1	n. d.	-
氫氟碳化物 (HFC)-134 (C2H2F4)	mg/kg		1	n. d.	-
氫氟碳化物 (HFC)-134a (CH2FCF3) (CAS No. : 811-97-2)	mg/kg		1	n. d.	-
氫氟碳化物 (HFC)-143 (CH3F3)	mg/kg		1	n. d.	-
氫氟碳化物 (HFC)-143a (CH3F3)	mg/kg		1	n. d.	-
氫氟碳化物 (HFC)-152a (C2H4F2) (CAS No. : 75-37-6)	mg/kg		1	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
氫氟碳化物 (HFC)-227ea (C3HF7) (CAS No. : 431-89-0)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氫氟碳化物 (HFC)-236fa (C3H2F6)	mg/kg		1	n. d.	-
氫氟碳化物 (HFC)-236ea (C3H2F6) (CAS No. : 431-63-0)	mg/kg		1	n. d.	-
氫氟碳化物 (HFC)-245ca (C3H3F5)	mg/kg		1	n. d.	-
氫氟碳化物 (HFC)-245fa (C3H3F5)	mg/kg		1	n. d.	-
氫氟碳化物 (HFC)-365mfc (C4H5F5)	mg/kg		1	n. d.	-
<b>全氟碳化物 / PFCs (Perfluorocarbon)</b>					
四氟甲烷 / F14 (CAS No. : 75-73-0)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
六氟乙烷 / Fluorocarbon 116 (CAS No. : 76-16-4)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
八氟丙烷 / Freon 218 (CAS No. : 76-19-7)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
十氟丁烷 / Decafluorobutane (CAS No. : 355-25-9)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
八氟環丁烷 / Freon C318 (CAS No. : 115-25-3)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
全氟-1-丁烯 / Perfluor-1-butene (CAS No. : 357-26-6)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
全氟異丁烯 / perfluorisobutene (CAS No. : 382-21-8)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
1,4-二氯八氟丁烷 / 1,4-dihydrooctafluorobutane (CAS No. : 377-36-6)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
2-全氟甲基丁烷 / nonafluor-2-(trifluoromethyl)butane (CAS No. : 594-91-2)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
全氟戊烷 / perfluoro-n-pentane (CAS No. : 678-26-2)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
2-全氟甲基戊烷 / 2-perfluoromethylpentane (CAS No. : 355-04-4)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
全氟己烷 / perfluorohexane (CAS No. : 355-42-0)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
<b>氟氯碳化物 / CFCs (Chlorofluorocarbons)</b>					
<b>Group I</b>					
氟氯碳化物 (Chlorofluorocarbon)-11 (CAS No. : 75-69-4)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-12 (CAS No. : 75-71-8)	mg/kg		1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-113 (CAS No. : 76-13-1)	mg/kg		1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-114 (CAS No. : 76-14-2)	mg/kg		1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-115 (CAS No. : 76-15-3)	mg/kg		1	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
<b>Group III</b>					
氟氯碳化物 (Chlorofluorocarbon)-13 (CAS No. : 75-72-9)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-111 (CAS No. : 354-56-3)	mg/kg		1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-112 (CAS No. : 76-12-0)	mg/kg		1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-211 (CAS No. : 422-78-6)	mg/kg		1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-212 (CAS No. : 3182-26-1)	mg/kg		1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-213 (CAS No. : 2354-06-5)	mg/kg		1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-214 (CAS No. : 29255-31-0)	mg/kg		1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-215 (CAS No. : 4259-43-2)	mg/kg		1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-216 (CAS No. : 661-97-2)	mg/kg		1	n. d.	-
氟氯碳化物 (Chlorofluorocarbon)-217 (CAS No. : 422-86-6)	mg/kg		1	n. d.	-
<b>氟氯氫碳化物 / HCFCs (Hydrochlorofluorocarbons)</b>					
氟氯氫碳化物 (HCFC)-21 (CAS No. : 75-43-4)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氟氯氫碳化物 (HCFC)-22 (CAS No. : 75-45-6)	mg/kg		1	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
氟氯氫碳化物 (HCFC)-31 (CAS No. : 593-70-4)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氟氯氫碳化物 (HCFC)-121 (CAS No. : 354-14-3)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-122 (CAS No. : 354-21-2)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-123 (CAS No. : 306-83-2)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-124 (CAS No. : 2837-89-0)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-131 (CAS No. : 359-28-4)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-132b (CAS No. : 1649-08-7)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-133a (CAS No. : 75-88-7)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-141b (CAS No. : 1717-00-6)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-142b (CAS No. : 75-68-3)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-221 (CAS No. : 422-26-4)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-222 (CAS No. : 422-49-1)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-223 (CAS No. : 422-52-6)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-224 (CAS No. : 422-54-8)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-225ca (CAS No. : 422-56-0)	mg/kg		1	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
氟氯氫碳化物 (HCFC)-225cb (CAS No. : 507-55-1)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氟氯氫碳化物 (HCFC)-226 (CAS No. : 431-87-8)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-231 (CAS No. : 421-94-3)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-232 (CAS No. : 460-89-9)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-233 (CAS No. : 7125-84-0)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-234 (CAS No. : 425-94-5)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-235 (CAS No. : 460-92-4)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-241 (CAS No. : 666-27-3)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-242 (CAS No. : 460-63-9)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-243 (CAS No. : 460-69-5)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-244	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-251 (CAS No. : 421-41-0)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-252 (CAS No. : 819-00-1)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-253 (CAS No. : 460-35-5)	mg/kg		1	n. d.	-
氟氯氫碳化物 (HCFC)-261 (CAS No. : 420-97-3)	mg/kg		1	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
氟氯氫碳化物 (HCFC)-262 (CAS No. : 421-02-03)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氟氯氫碳化物 (HCFC)-271 (CAS No. : 430-55-7)	mg/kg		1	n. d.	-
<b>海龍 (Halons)</b>					
海龍 (Halon)-1211 (CAS No. : 353-59-3)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
海龍 (Halon)-1301 (CAS No. : 75-63-8)	mg/kg		1	n. d.	-
海龍 (Halon)-2402 (CAS No. : 124-73-2)	mg/kg		1	n. d.	-
溴甲烷 / Bromomethane (CAS No. : 74-83-9)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
<b>不完全鹵化氟溴化物 / HBFCs (Hydrobromofluorocarbons)</b>					
不完全鹵化氟溴化物 (HBFC)-21B2 (CHFBr <sub>2</sub> ) (CAS No. : 1868-53-7)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-22B1 (CHF <sub>2</sub> Br) (CAS No. : 1511-62-2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-31B1 (CH <sub>2</sub> FBr) (CAS No. : 373-52-4)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-121B4 (C <sub>2</sub> HFBr <sub>4</sub> )	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-122B3 (C <sub>2</sub> HF <sub>2</sub> Br <sub>3</sub> )	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-123B2 (C <sub>2</sub> HF <sub>3</sub> Br <sub>2</sub> )	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-124B1 (C <sub>2</sub> HF <sub>4</sub> Br)	mg/kg		1	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
不完全鹵化氟溴化物 (HBFC)-131B3 (C2H2FBr3)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-132B2 (C2H2F2Br2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-133B1 (C2H2F3Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-141B2 (C2H3FBr2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-142B1 (C2H3F2Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-151B1 (C2H4FBr)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-221B6 (C3HFBr6)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-222B5 (C3HF2Br5)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-223B4 (C3HF3Br4)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-224B3 (C3HF4Br3)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-225B2 (C3HF5Br2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-226B1 (C3HF6Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-231B5 (C3H2FBr5)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-232B4 (C3H2F2Br4)	mg/kg		1	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
不完全鹵化氟溴化物 (HBFC)-233B3 (C3H2F3Br3)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-234B2 (C3H2F4Br2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-235B1 (C3H2F5Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-241B4 (C3H3FBr4)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-242B3 (C3H3F2Br3)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-243B2 (C3H3F3Br2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-244B1 (C3H3F4Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-251B3 (C3H4FBr3)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-252B2 (C3H4F2Br2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-253B1 (C3H4F3Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-261B2 (C3H5FBr2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-262B1 (C3H5F2Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 (HBFC)-271B1 (C3H6FBr)	mg/kg		1	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	限值 (Limit)
				No. 1	
氯化碳氫化物 / CHCs (Chlorinate hydrocarbon)					
1, 1, 1, 2-四氯乙烷 / 1, 1, 1, 2-Tetrachloroethane (CAS No. : 630-20-6)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
1, 1, 1-三氯乙烷 / 1, 1, 1-Trichloroethane (CAS No. : 71-55-6)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
1, 1, 2, 2-四氯乙烷 / 1, 1, 2, 2-Tetrachloroethane (CAS No. : 79-34-5)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
1, 1, 2-三氯乙烷 / 1, 1, 2-Trichloroethane (CAS No. : 79-00-5)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
1, 1-二氯乙烷 / 1, 1-Dichloroethane (CAS No. : 75-34-3)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
1, 1-二氯乙烯 / 1, 1-Dichloroethene (CAS No. : 75-35-4)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
1, 1-二氯丙烯 / 1, 1-Dichloropropene (CAS No. : 563-58-6)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
1, 2, 3-三氯丙烷 / 1, 2, 3-Trichloropropane (CAS No. : 96-18-4)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
1, 2-二氯乙烷 / 1, 2-Dichloroethane (CAS No. : 107-06-2)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-

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# 測試報告

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南亞塑膠工業股份有限公司(台灣) / NAN YA PLASTICS CORPORATION (TAIWAN)

(南亞電子材料(昆山)有限公司 / NAN YA ELECTRONIC MATERIALS (KUNSHAN) CORP., LTD.)

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(廣東省惠州市博羅縣石灣鎮永石大道 / YONGSHI BOULEVARD SHIWAN TOWN BOLUO COUNTY HUIZHOU CITY GUANG DONG)



測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	限值 (Limit)
				No. 1	
1,2-二氯丙烷 / 1,2-Dichloropropane (CAS No. : 78-87-5)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
1,3-二氯丙烷 / 1,3-Dichloropropane (CAS No. : 142-28-9)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
2,2-二氯丙烷 / 2,2-Dichloropropane (CAS No. : 594-20-7)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
四氯甲烷 (四氯化碳) / Carbon tetrachloride (CAS No. : 56-23-5)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氯乙烷 / Chloroethane (CAS No. : 75-00- 3)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氯仿 / Chloroform (CAS No. : 67-66-3)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氯甲烷 / Chloromethane (CAS No. : 74- 87-3)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
順-1,2-二氯乙烯 / cis-1,2- Dichloroethene (CAS No. : 156-59-2)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
順-1,3-二氯丙烯 / cis-1,3- Dichloropropene (CAS No. : 10061-01-5)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
六氯丁二烯 / Hexachlorobutadiene (CAS No. : 87-68-3)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	限值 (Limit)
				No. 1	
二氯甲烷 / Dichloromethane (CAS No. : 75-09-2)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
四氯乙烯 / Tetrachloroethene (CAS No. : 127-18-4)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
反-1,2-二氯乙烯 / trans-1,2-Dichloroethene (CAS No. : 156-60-5)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
反-1,3-二氯丙烯 / trans-1,3-Dichloropropene (CAS No. : 10061-02-6)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
三氯乙烯 / Trichloroethylene (CAS No. : 79-01-6)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
六氟化硫 / Sulfur Hexafluoride (SF6) (CAS No. : 2551-62-4)	mg/kg	參考US EPA 5021A (2014), 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
N-苯基苯胺與苯乙烯和2,4,4-三甲基戊烯的反應物 / Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene (BNST) (CAS No. : 68921-45-9)	mg/kg	參考US EPA 3550C (2007), 以氣相層析/質譜儀檢測。 / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	100	n. d.	-
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)	mg/kg	參考US EPA 3550C (2007), 以氣相層析/質譜儀檢測。 / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	5	n. d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	限值 (Limit)
				No. 1	
二辛基錫 / Dioctyl Tin (DOT)	mg/kg	參考SGS內部方法RSTS-EE-SVHC-007, 以氣相層析/質譜儀定性、氣相層析儀/火焰光度偵測器定量。 / SGS In-House method-RSTS-EE-SVHC-007. Qualitative by GC/MS. Quantitative by GC/FPD.	230	n. d.	-
二正辛基-雙(2-乙基己基巰基乙酸酯)錫 / 2-ethylhexyl 10-ethyl-4, 4-dioctyl-7-oxo-8-oxa-3, 5-dithia-4-stannatetradecanoate (DOTE)***(CAS No.: 15571-58-1)	mg/kg	參考SGS內部方法RSTS-EE-SVHC-007, 以氣相層析/質譜儀定性、氣相層析儀/火焰光度偵測器定量。 / SGS In-House method-RSTS-EE-SVHC-007. Qualitative by GC/MS. Quantitative by GC/FPD.***	-	n. d.	-
單辛基錫 / Monooctyltin (MOT)	mg/kg	參考SGS內部方法RSTS-EE-SVHC-007, 以氣相層析/質譜儀定性、氣相層析儀/火焰光度偵測器定量。 / SGS In-House method-RSTS-EE-SVHC-007. Qualitative by GC/MS. Quantitative by GC/FPD.	138	n. d.	-
二正辛基-雙(2-乙基己基巰基乙酸酯)錫和單辛基-三(2-乙基己基巰基乙酸酯)錫的反應物 / Reaction mass of 2-ethylhexyl 10-ethyl-4, 4-dioctyl-7-oxo-8-oxa-3, 5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3, 5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)***	mg/kg	參考SGS內部方法RSTS-EE-SVHC-007, 以氣相層析/質譜儀定性、氣相層析儀/火焰光度偵測器定量。 / SGS In-House method-RSTS-EE-SVHC-007. Qualitative by GC/MS. Quantitative by GC/FPD.***	-	n. d.	-
鄰苯二甲酸二己酯(支鏈和直鏈) / 1, 2-Benzenedicarboxylic acid, dihexyl ester, branched and linear (CAS No.: 68515-50-4)	mg/kg	參考IEC 62321-8 (2017), 以氣相層析儀/質譜儀檢測。 / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n. d.	-
鄰苯二甲酸二(2-乙基己基)酯 / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg		50	n. d.	1000

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
			鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No. : 84-74-2)	mg/kg	參考IEC 62321-8 (2017), 以氣相層析儀/質譜儀檢測。 / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.
鄰苯二甲酸丁苄甲酯 / BBP (Butyl Benzyl phthalate) (CAS No. : 85-68-7)	mg/kg	50	n. d.	1000	
鄰苯二甲酸二異丁酯 / DIBP (Di-isobutyl phthalate) (CAS No. : 84-69-5)	mg/kg	50	n. d.	1000	
鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No. : 28553-12-0; 68515-48-0)	mg/kg	50	n. d.	-	
鄰苯二甲酸二異癸酯 / DIDP (Di-isodecyl phthalate) (CAS No. : 26761-40-0; 68515-49-1)	mg/kg	50	n. d.	-	
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No. : 117-84-0)	mg/kg	50	n. d.	-	
鄰苯二甲酸二正己酯 / DNHP (Di-n-hexyl phthalate) (CAS No. : 84-75-3)	mg/kg	50	n. d.	-	
鄰苯二甲酸二(C6-8支鏈與直鏈)烷基酯, 富C7 / DIHP (1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich) (CAS No. : 71888-89-6)	mg/kg	50	n. d.	-	
鄰苯二甲酸二(C7-11支鏈與直鏈)烷基酯 / DHNUP (1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters) (CAS No. : 68515-42-4)	mg/kg	50	n. d.	-	
鄰苯二甲酸二(2-甲氧基乙基)酯 / DMEP (Bis (2-methoxyethyl) phthalate) (CAS No. : 117-82-8)	mg/kg	50	n. d.	-	
鄰苯二甲酸二異戊酯 / DIPP (Di-isopentyl phthalate) (CAS No. : 605-50-5)	mg/kg	50	n. d.	-	

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No. 1	限值 (Limit)
鄰苯二甲酸二(支鏈及直鏈戊基)酯 / 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (CAS No.: 84777-06-0)	mg/kg	參考IEC 62321-8 (2017), 以氣相層析儀/質譜儀檢測. / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n. d.	-
鄰苯二甲酸二戊酯 / Di-n-pentyl phthalate (CAS No.: 131-18-0)	mg/kg		50	n. d.	-
鄰苯二甲酸正戊異戊酯 / NPIPP (N-pentyl-isopentyl phthalate) (CAS No.: 776297-69-9)	mg/kg		50	n. d.	-
氧化雙三丁基錫 / Bis(tributyltin)oxide (TBTO)***(CAS No.: 56-35-9)	mg/kg	參考ISO 17353 (2004), 以氣相層析儀/火焰光度偵測器檢測. / With reference to ISO 17353 (2004). Analysis was performed by GC/FPD.	-	n. d.	-
鄰苯二甲酸二乙酯 / DEP (Di-ethyl phthalate) (CAS No.: 84-66-2)	mg/kg	參考IEC 62321-8 (2017), 以氣相層析儀/質譜儀檢測. / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n. d.	-
鄰苯二甲酸二甲酯 / DMP (Di-methyl phthalate) (CAS No.: 131-11-3)	mg/kg		50	n. d.	-
鹵素(氯) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg	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.	50	364	-
鹵素(溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	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.	50	54600	-
紅磷 / Red phosphorus	**	以熱裂解-氣相層析/質譜儀分析. / Analysis was performed by Pyrolyzer-GC/MS.	-	Negative	-

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### 備註(Note) :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n. d. = Not Detected (未檢出)
4. "-" = Not Regulated (無規格值)
5. \*\*= 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".
8. \*\*\*: 該物質是由二辛基錫、單辛基錫、三丁基錫或各別元素(例如: 砷、硼、鉍)之測試結果計算得知。其MDL是針對二辛基錫、單辛基錫、三丁基錫或元素(例如: 砷、硼、鉍)之評估。(The substance was calculated by the test results of Dioctyl Tin (DOT), MonoctylTin (MOT), Tributyl Tin (TBT) or element (Ex. Arsenic, Boron, Beryllium respectively). The MDL was evaluated for Dioctyl Tin (DOT), MonoctylTin (MOT), Tributyl Tin (TBT) or element (Ex. Arsenic, Boron, Beryllium respectively).)
9. (\*2): 水合硼酸鈉: 依照歐洲化學總署解釋以無水四硼酸二鈉數據作為代表(歐洲化學總署回信編號 Ref no.: INC 000000032519) / Tetraboron disodium heptaoxide, hydrate: Only anhydrous form of disodium tetraborate is relevant and considered according to ECHA explanation (Ref no.: INC 000000032519).
10. 參數換算表 / Parameter Conversion Table : [http://twap.sgs.com/sgsrsts/chn/download-REACH\\_tw.asp](http://twap.sgs.com/sgsrsts/chn/download-REACH_tw.asp)
11. (\*2): 被萃取出的溶出硼/砷是以感應耦合電漿原子發射光譜儀檢測得之。 / The extracted soluble Boron / Arsenic are detected by ICP-AES.
12. 鉍青銅是一種主要成份為鉍及銅的合金, 當偵測不到總鉍含量時, 亦表示不含鉍青銅。  
(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..)

### PFOS參考資訊(Reference Information) : 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm), 在半成品、成品或零部件中不得超過0.1%(1000ppm), 在紡織品或塗層材料中不得超過1µg/m<sup>2</sup>。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1 µg/m<sup>2</sup>.)

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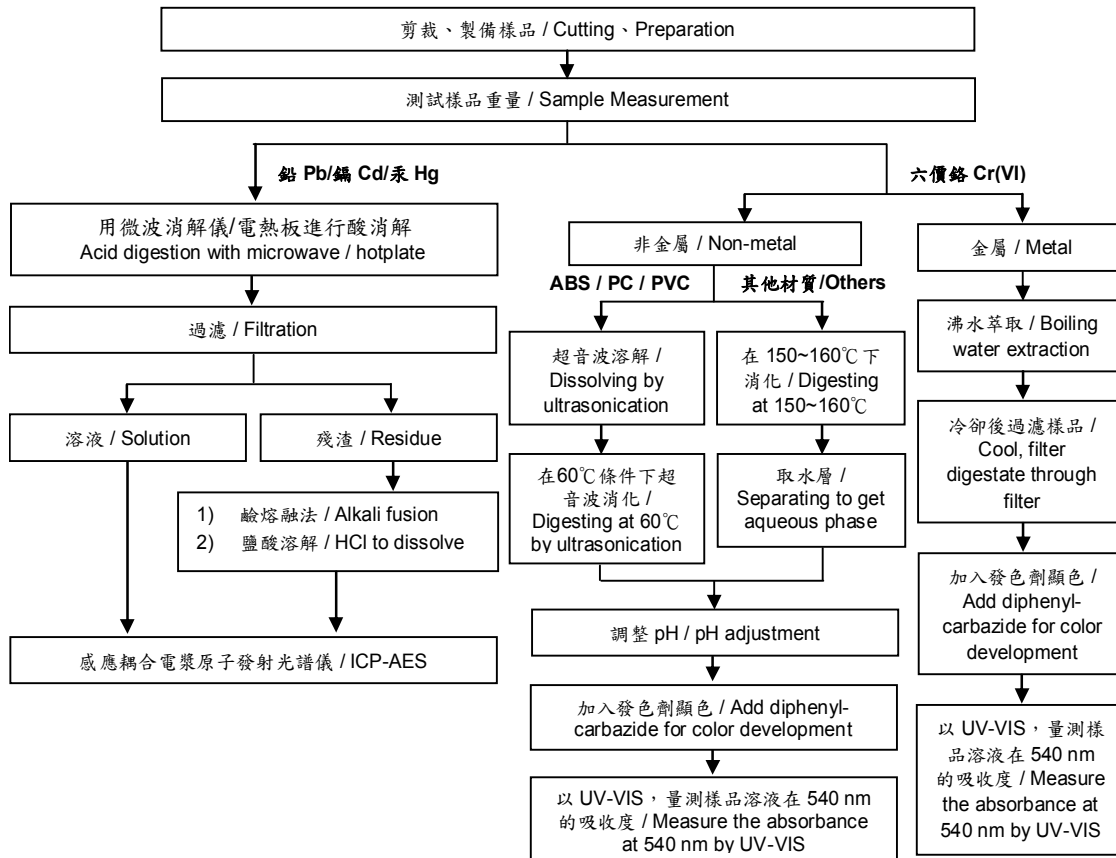


### 重金屬流程圖 / Analytical flow chart of Heavy Metal

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<sup>6+</sup> test method excluded)

- 測試人員：王志瑋 / Technician : JR Wang
- 測試負責人：張啟興 / Supervisor: Troy Chang





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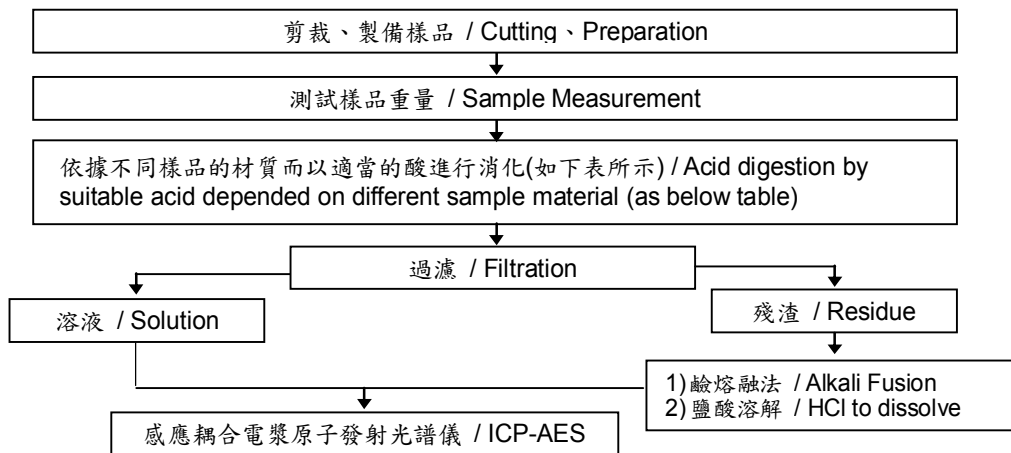
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根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.

- 測試人員：王志瑋 / Technician : JR Wang
- 測試負責人：張啟興 / Supervisor: Troy Chang

### 元素以 ICP-AES 分析的消化流程圖 (Flow Chart of digestion for the elements analysis performed by ICP-AES)



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 / Aqua regia, HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub>
玻璃 / Glass	硝酸,氫氟酸 / HNO <sub>3</sub> /HF
金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO <sub>3</sub>
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> O <sub>2</sub> , HNO <sub>3</sub> , 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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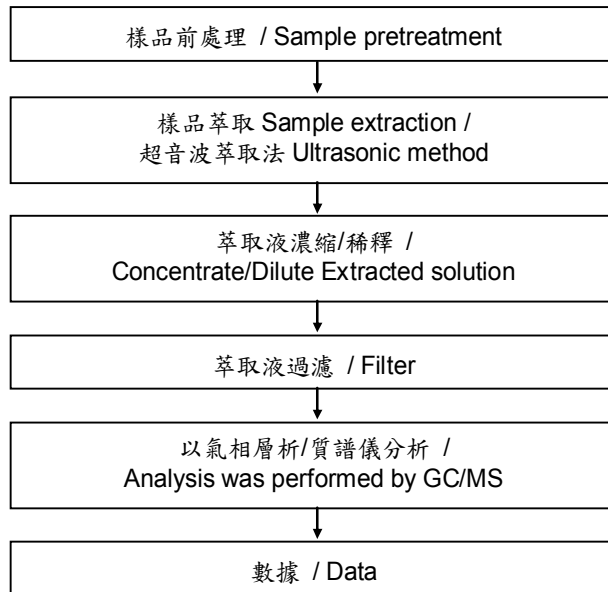
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### 分析流程圖 / Analytical flow chart

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

### 【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)、BNST】



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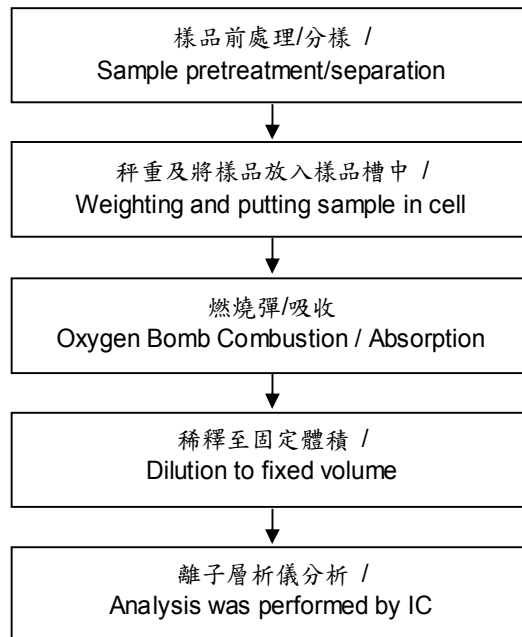
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### 鹵素分析流程圖 / Analytical flow chart - Halogen

- 測試人員：陳恩臻 / Technician: Rita Chen
- 測試負責人：張啟興 / Supervisor: Troy Chang



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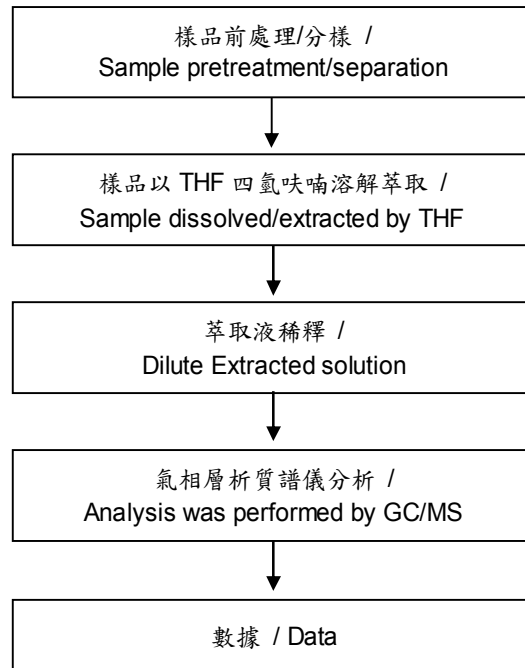
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### 可塑劑分析流程圖 / Analytical flow chart - Phthalate

- 測試人員：徐毓明 / Technician: Andy Shu
- 測試負責人：張啟興 / Supervisor nt: Troy Chang

#### 【測試方法/Test method: IEC 62321-8】



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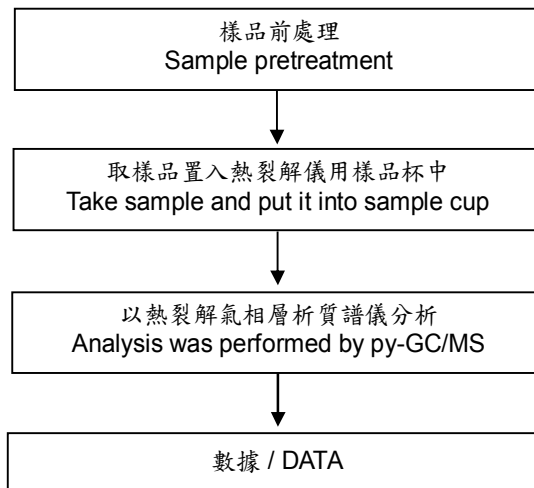
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### 紅磷分析流程 / Analytical flow chart - Red phosphorus

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



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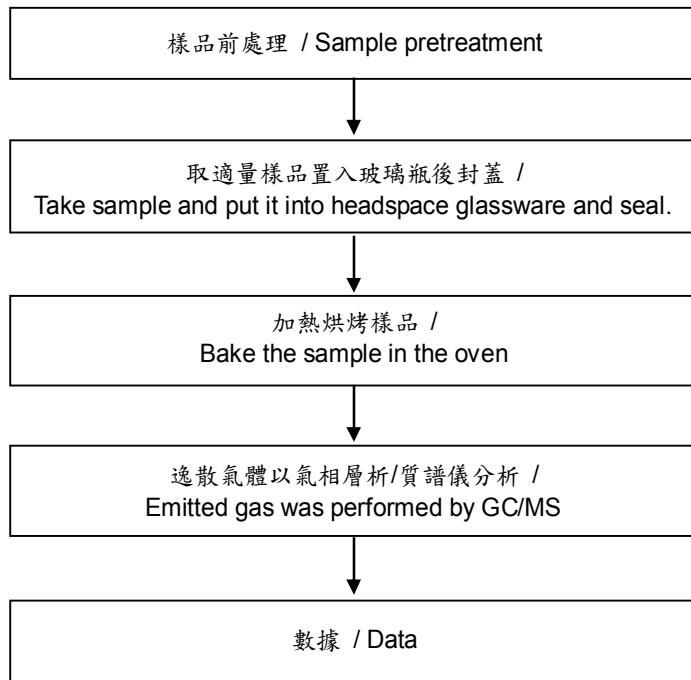
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### 揮發性有機化合物分析流程圖 /

### Analytical flow chart - volatile organic compounds (VOCs)

- 測試人員：吳椿景 / Technician : Chun Wu
- 測試負責人：陳新智 / Supervisor : Shinjyh Chen

【參考方法(Reference method) : US EPA 5021, 5021A】



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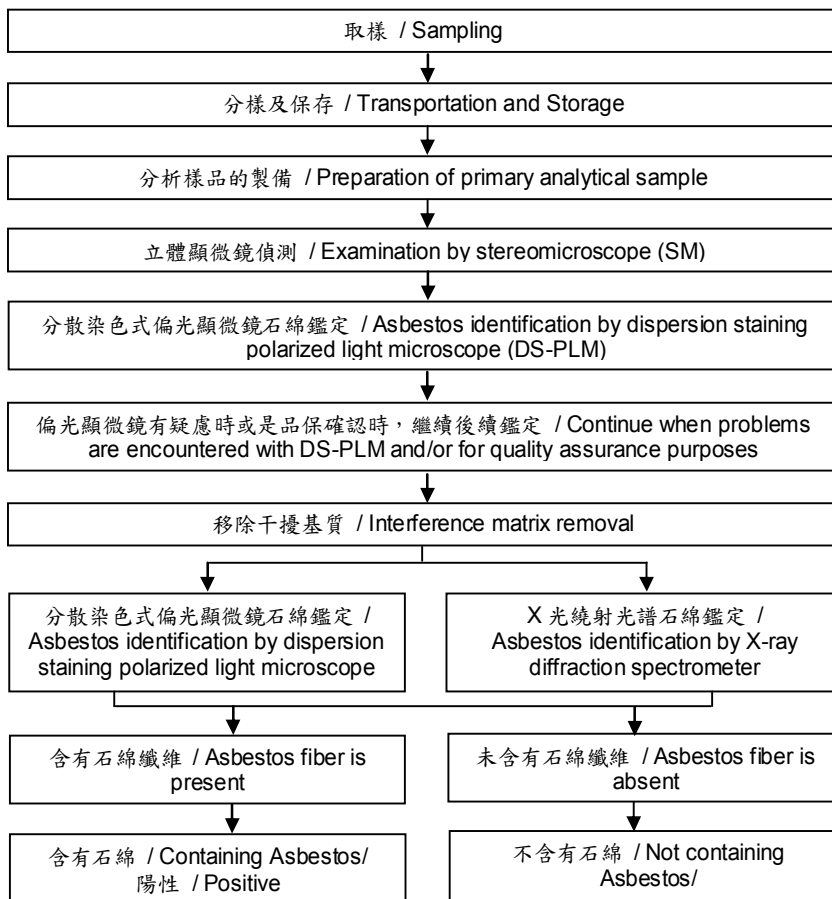
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### 石綿鑑定分析流程圖 / Analysis flow chart for determination of Asbestos

- 測試人員：高鍵忠 / Technician: Victor Kao
- 測試負責人：魏明芬 / Supervisor: Wendy Wei

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



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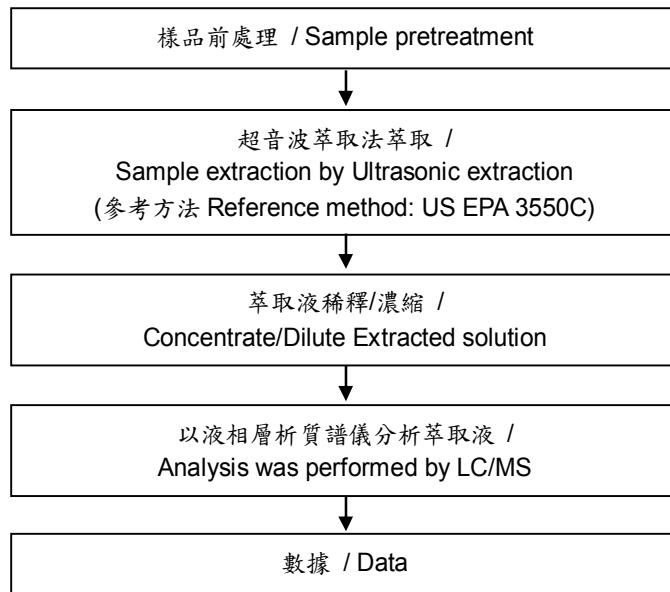
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### 全氟辛酸/全氟辛烷磺酸分析流程圖 / Analytical flow chart - PFOA/PFOS

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





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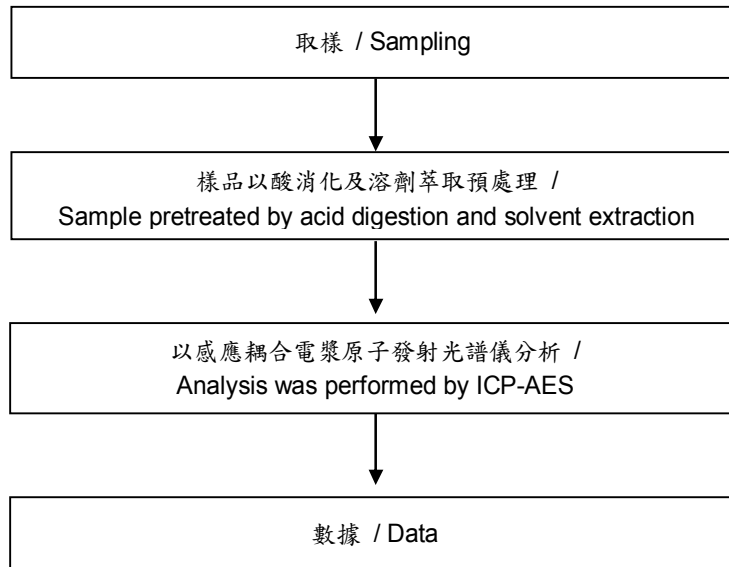
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### 二氯化鈷分析流程圖 / Analytical flow chart - Cobalt dichloride

- 測試人員：王志瑋 / Technician : JR Wang
- 測試負責人：張啟興 / Supervisor: Troy Chang



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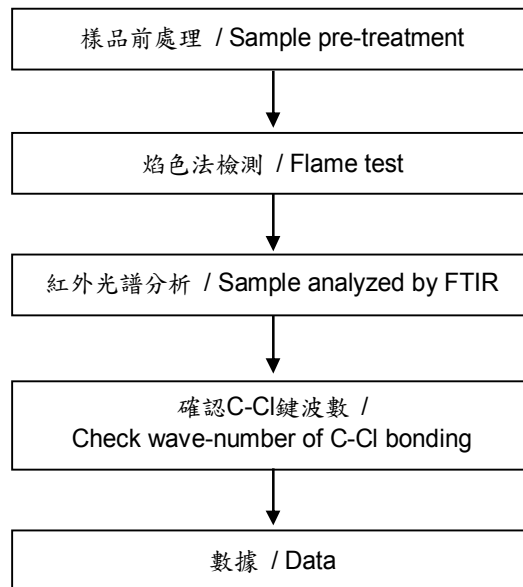
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### 聚氯乙稀物質判定分析流程圖 / Analysis flow chart - PVC

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



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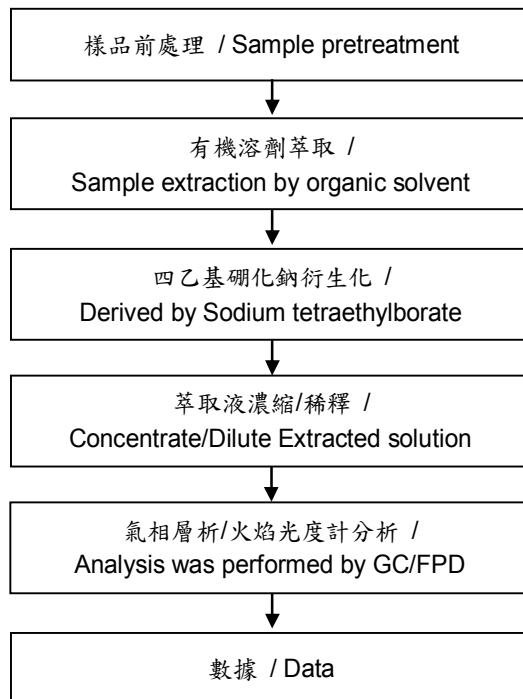
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(廣東省惠州市博羅縣石灣鎮永石大道 / YONGSHI BOULEVARD SHIWAN TOWN BOLUO COUNTY HUIZHOU CITY GUANG DONG)

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

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



## 測試報告

## Test Report

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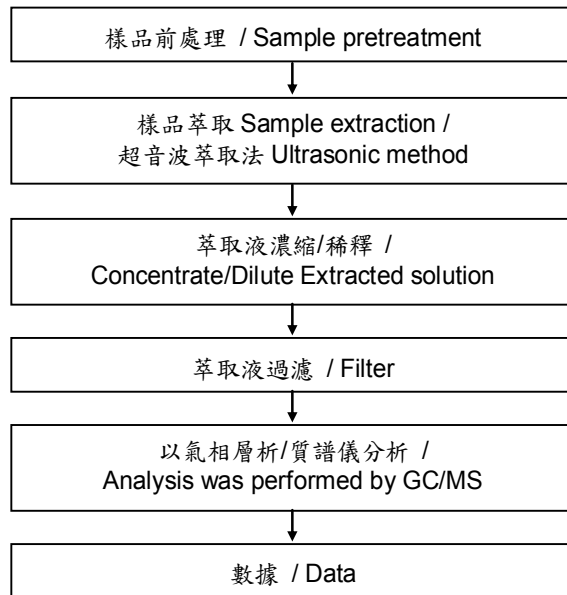
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### 分析流程圖 / Analytical flow chart

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

### 【多氯三聯苯(PCTs)、多氯奈(PCNs)、多氯聯苯(PCBs)、氯化石蠟(SCCP)】



## 測試報告

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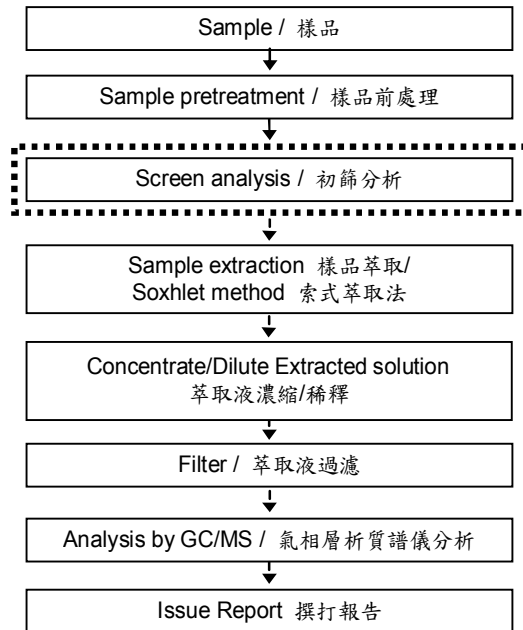
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### 多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBB/PBDE

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

初次測試程序 / First testing process —————>  
 選擇性篩檢程序 / Optional screen process .....>  
 確認程序 / Confirmation process - - ->



## 測試報告

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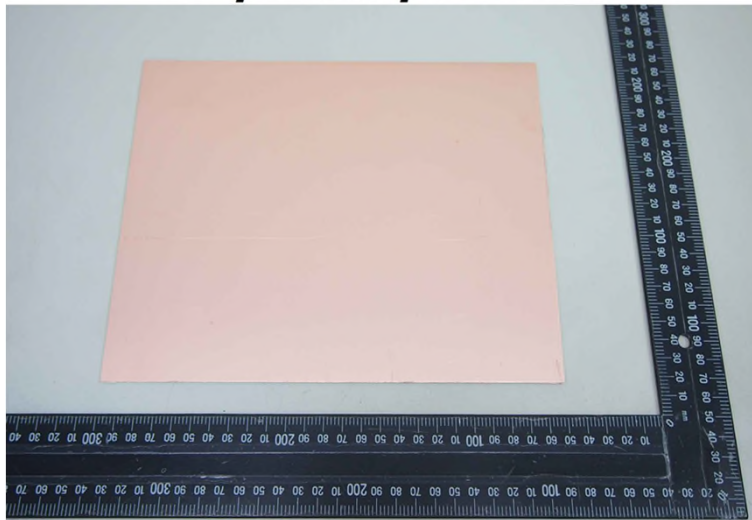
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**\* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。 \***  
 (The tested sample / part is marked by an arrow if it's shown on the photo.)

### CE/2017/C0524



**\*\* 報告結尾 (End of Report) \*\***

## Test Report

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DAI-ICHI SEIKO CO., LTD.

15F-6, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



The following samples was/were submitted and identified by/on behalf of the applicant as :

Sample Submitted By : DAI-ICHI SEIKO CO., LTD.  
Sample Description : PLASTIC(1844-011)  
Style/Item No. : DURANEX 310NF  
Sample Receiving Date : 2017/08/10  
Testing Period : 2017/08/10 TO 2017/08/16

=====  
**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 Result(s)** : Please refer to following pages.

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



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DAI-ICHI SEIKO CO., LTD.

15F-6, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



## Test Result(s)

PART NAME No.1 : BLACK PLASTIC

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4 (2013) and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321-7-2 (2017) and performed by UV-VIS.	8	n.d.
<b>Sum of PBBs</b>	mg/kg	With reference to IEC 62321-6 (2015) and performed by GC/MS.	-	n.d.
Monobromobiphenyl	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.
<b>Sum of PBDEs</b>	mg/kg		-	n.d.
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.	

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DAI-ICHI SEIKO CO., LTD.

15F-6, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



Test Item(s)	Unit	Method	MDL	Result
				No.1
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ - HBCDD, $\gamma$ - HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	With reference to IEC 62321 (2008). Analysis was performed by GC/MS.	5	n.d.
Antimony (Sb)	mg/kg	With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.	2	n.d.
Antimony trioxide (Sb <sub>2</sub> O <sub>3</sub> )*** (CAS No.: 1309-64-4)	mg/kg	With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.***	-	n.d.
Phosphorus (P)	mg/kg	With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.	2	25500

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DAI-ICHI SEIKO CO., LTD.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	With reference to US EPA 3550C (2007). Analysis was performed by LC/MS.	10	n.d.
PFOA (CAS No.: 335-67-1)	mg/kg	With reference to US EPA 3550C (2007). Analysis was performed by LC/MS.	10	n.d.
Tetrabromobisphenol A (TBBP-A) (CAS No.: 79-94-7)	mg/kg	With reference to Global SOP RSTS-E&E-121 (2012). Analysis was performed by LC/MS.	10	n.d.
<b>Halogen</b>				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582 (2016). Analysis was performed by IC.	50	928
Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg		50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg		50	n.d.
Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.

**Note :**

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected = less than MDL
4. " - " = Not Regulated
5. \*\*\*: The substance was calculated by the test result of Antimony. The MDL was evaluated for Antimony.
6. Parameter Conversion Table : [http://twap.sgs.com/sgrsts/chn/download-REACH\\_tw.asp](http://twap.sgs.com/sgrsts/chn/download-REACH_tw.asp)

**PFOS Reference Information : POPs - (EU) 757/2010**

Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1µg/m<sup>2</sup>.

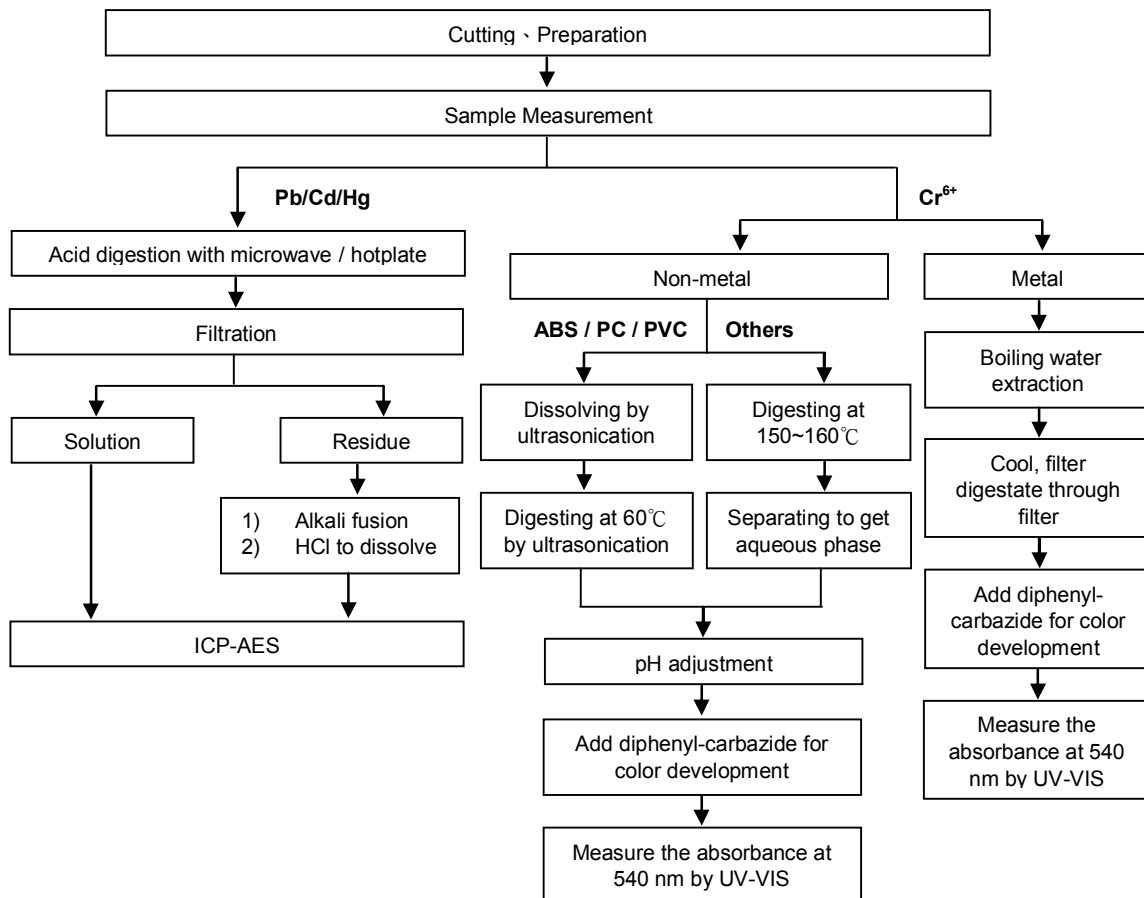
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### Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)

- Technician : JR Wang
- Supervisor: Troy Chang



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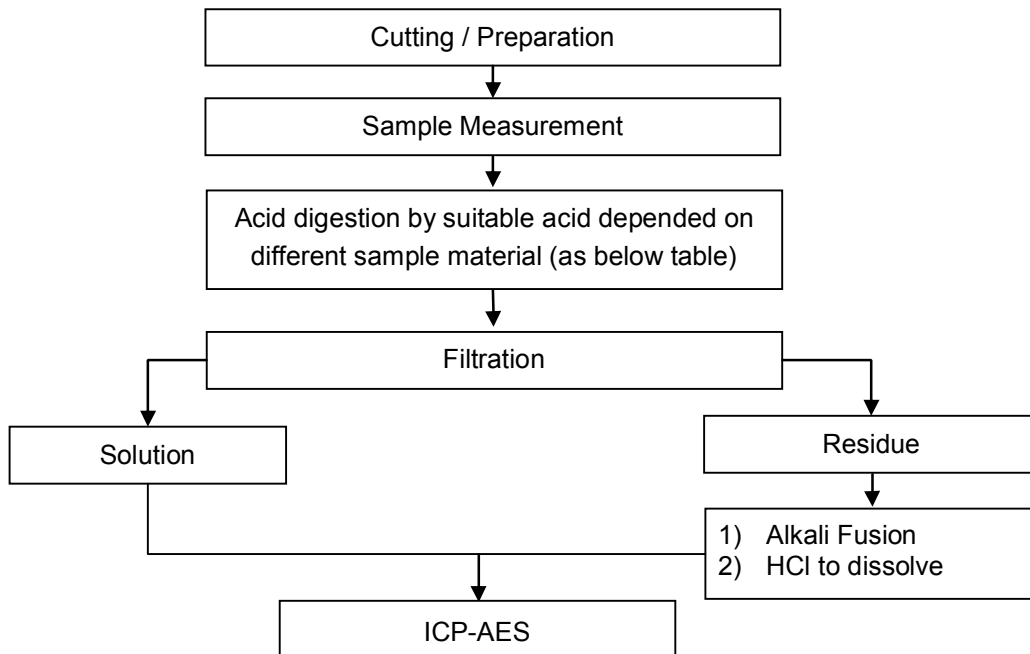
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These samples were dissolved totally by pre-conditioning method according to below flow chart.

- Technician: JR Wang
- Supervisor: Troy Chang

### Flow Chart of digestion for the elements analysis performed by ICP-AES



Steel, copper, aluminum, solder	Aqua regia, HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub>
Glass	HNO <sub>3</sub> /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO <sub>3</sub>
Plastic	H <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> O <sub>2</sub> , HNO <sub>3</sub> , HCl
Others	Added appropriate reagent to total digestion

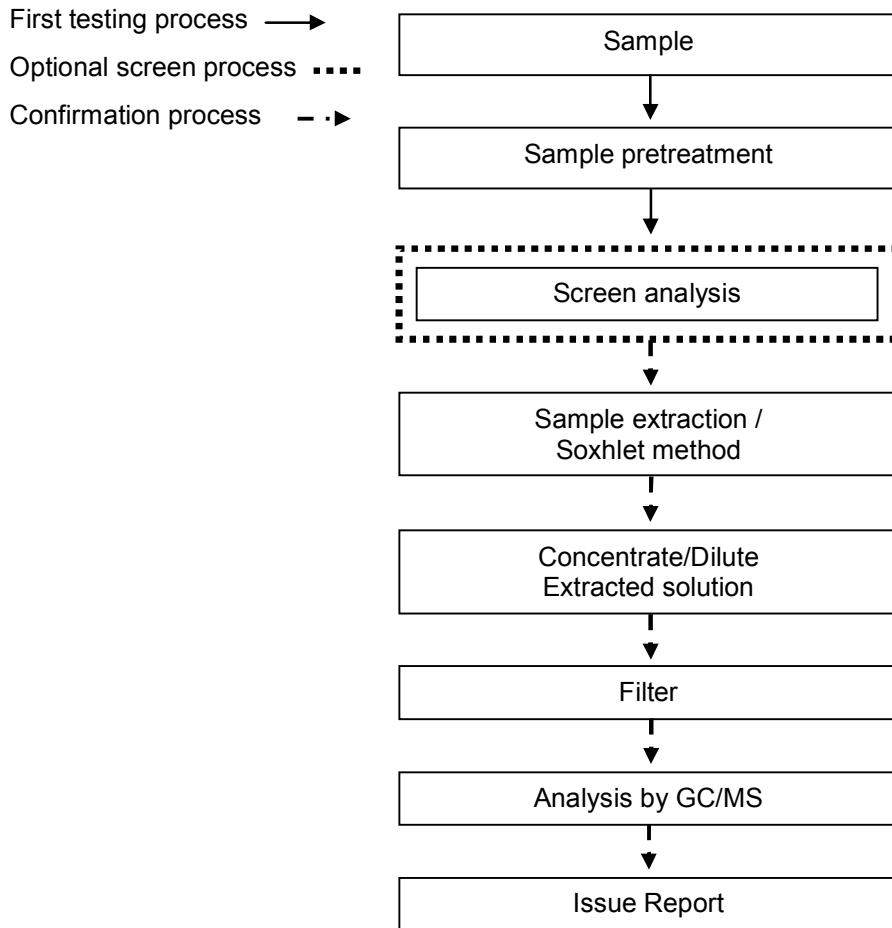
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### Analytical flow chart – PBB / PBDE

- Technician : Yaling Tu
- Supervisor: Troy Chang



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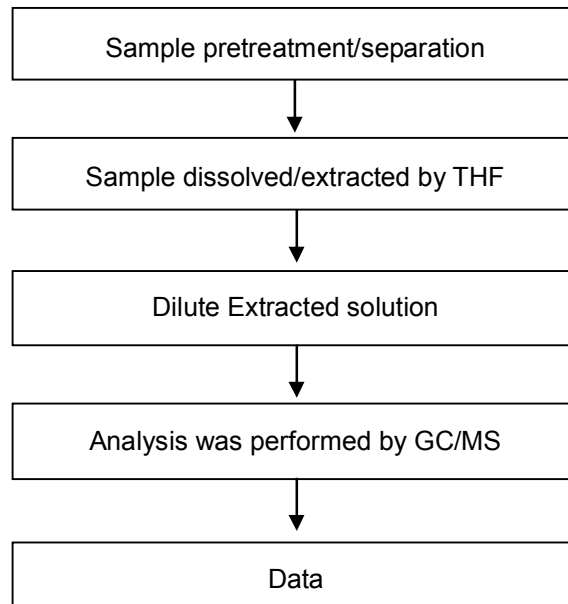
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### Analytical flow chart - Phthalate

- Technician: Andy Shu
- Supervisor: Troy Chang

**【Test method: IEC 62321-8】**



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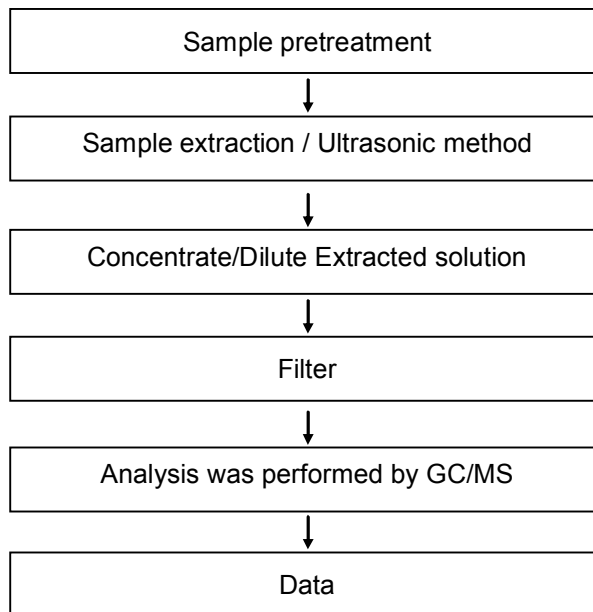
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### Analytical flow chart - HBCDD

- Technician: Yaling Tu
- Supervisor: Troy Chang



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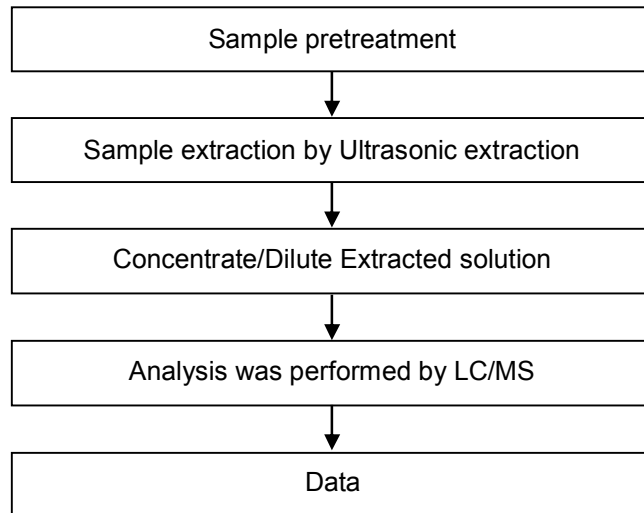
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### Analytical flow chart - TBBP-A

- Technician: Yaling Tu
- Supervisor: Troy Chang



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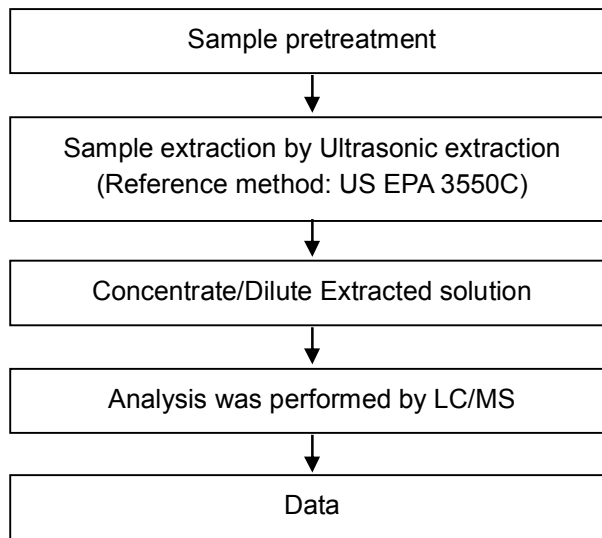
DAI-ICHI SEIKO CO., LTD.

15F-6, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



### Analytical flow chart - PFOA/PFOS

- Technician: Yaling Tu
- Supervisor: Troy Chang



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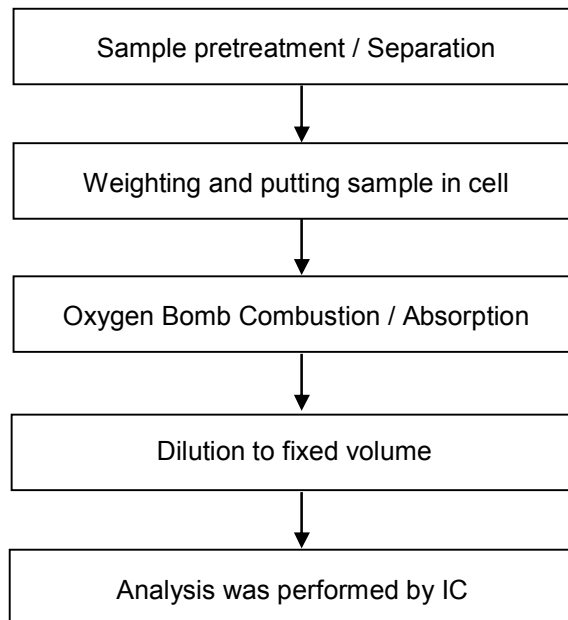
DAI-ICHI SEIKO CO., LTD.

15F-6, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



### Analytical flow chart - Halogen

- Technician: Rita Chen
- Supervisor: Troy Chang



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## Test Report

No. : CE/2017/82435A

Date : 2017/08/22

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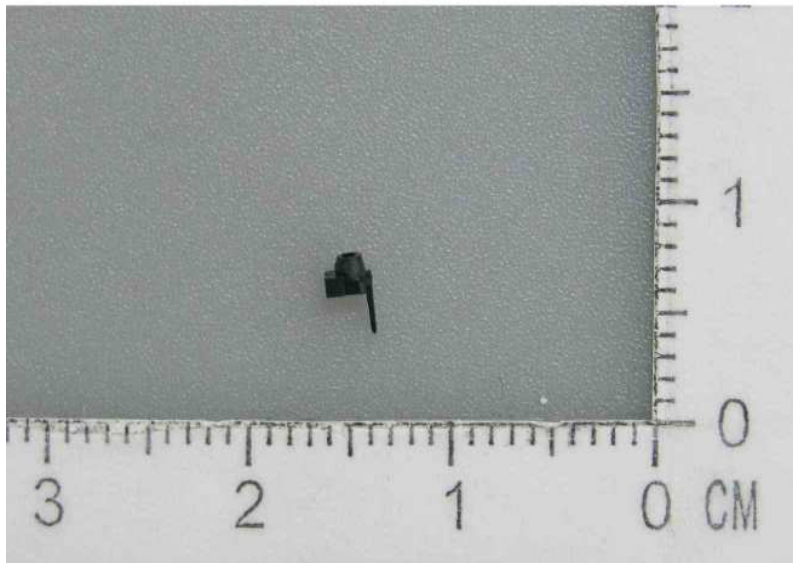
DAI-ICHI SEIKO CO., LTD.

15F-6, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



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

### CE/2017/82435



\*\* End of Report \*\*

## Test Report

No. : CE/2017/C3496

Date : 2017/12/22

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DAI-ICHI SEIKO CO., LTD.

7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



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

Sample Submitted By : DAI-ICHI SEIKO CO., LTD.  
Sample Description : METAL(2726-000\*)  
Style/Item No. : C5210R  
Sample Receiving Date : 2017/12/18  
Testing Period : 2017/12/18 TO 2017/12/22

=====  
**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 Method** : Please refer to following pages.

**Test Result(s)** : Please refer to following pages.

  
JR Wang / Asst. Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory - Taipei



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# Test Report

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DAI-ICHI SEIKO CO., LTD.

7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



## Test Result(s)

PART NAME No.1 : COPPER COLORED METAL SHEET

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	11.4
Mercury (Hg)	mg/kg	With reference to IEC 62321-4 (2013) and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)(#2)	µg/cm <sup>2</sup>	With reference to IEC 62321-7-1 (2015) and performed by UV-VIS.	0.10	n.d.

### Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. (#2) =
  - a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm<sup>2</sup>.  
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/cm<sup>2</sup>).  
The coating is considered a non-Cr(VI) based coating
  - c. The result between 0.10 µg/cm<sup>2</sup> and 0.13 µg/cm<sup>2</sup> is considered to be inconclusive - unavoidable coating variations may influence the determination.

DAI-ICHI SEIKO CO., LTD.

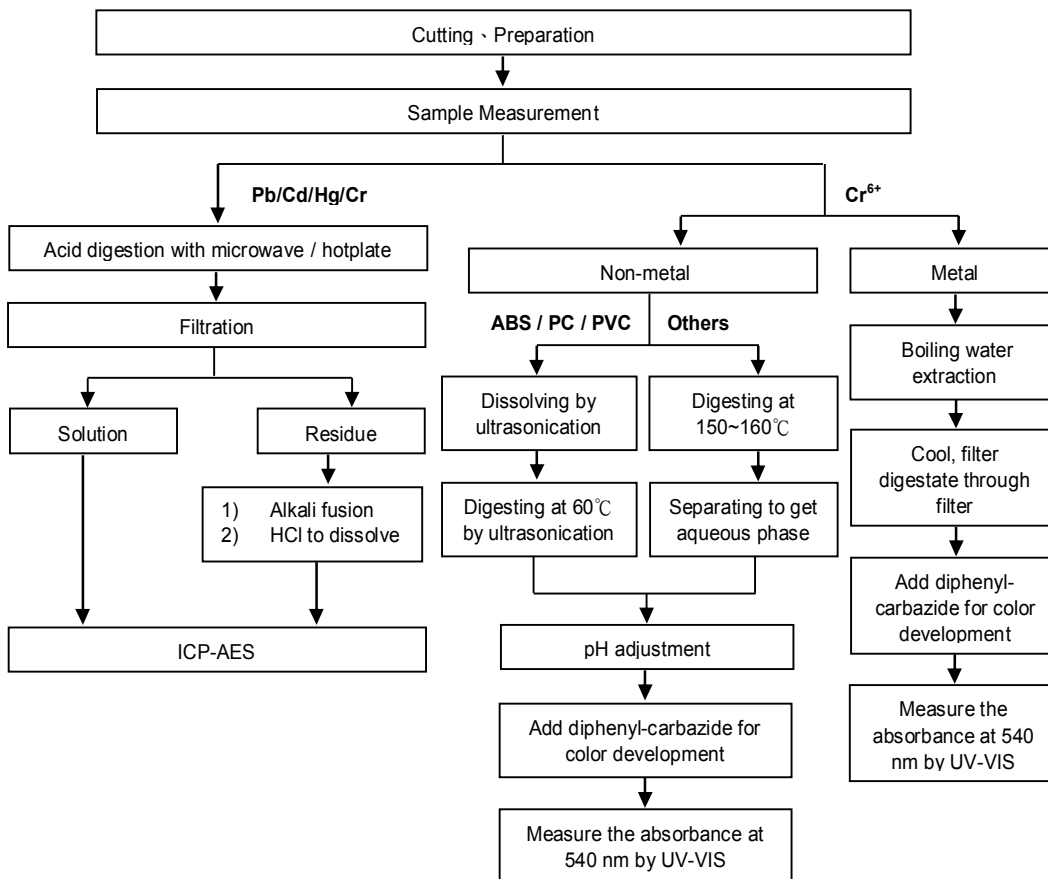
7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



### Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)

- Technician : JR Wang
- Supervisor: Troy Chang



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## Test Report

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DAI-ICHI SEIKO CO., LTD.

7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



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

### CE/2017/C3496



\*\* End of Report \*\*

## Test Report

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DAI-ICHI SEIKO CO., LTD.

7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.




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


Sample Submitted By : DAI-ICHI SEIKO CO., LTD.  
Sample Description : METAL(2729-0001)  
Style/Item No. : C5191R  
Sample Receiving Date : 2017/12/18  
Testing Period : 2017/12/18 TO 2017/12/22

=====  
**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 Method** : Please refer to following pages.

**Test Result(s)** : Please refer to following pages.

  
JR Wang / Asst. Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory - Taipei





# Test Report

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Date : 2017/12/22

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DAI-ICHI SEIKO CO., LTD.

7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



## Test Result(s)

PART NAME No.1 : COPPER COLORED METAL SHEET

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	11.7
Mercury (Hg)	mg/kg	With reference to IEC 62321-4 (2013) and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)(#2)	µg/cm <sup>2</sup>	With reference to IEC 62321-7-1 (2015) and performed by UV-VIS.	0.10	n.d.

### Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. (#2) =
  - a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm<sup>2</sup>.  
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/cm<sup>2</sup>).  
The coating is considered a non-Cr(VI) based coating
  - c. The result between 0.10 µg/cm<sup>2</sup> and 0.13 µg/cm<sup>2</sup> is considered to be inconclusive - unavoidable coating variations may influence the determination.

DAI-ICHI SEIKO CO., LTD.

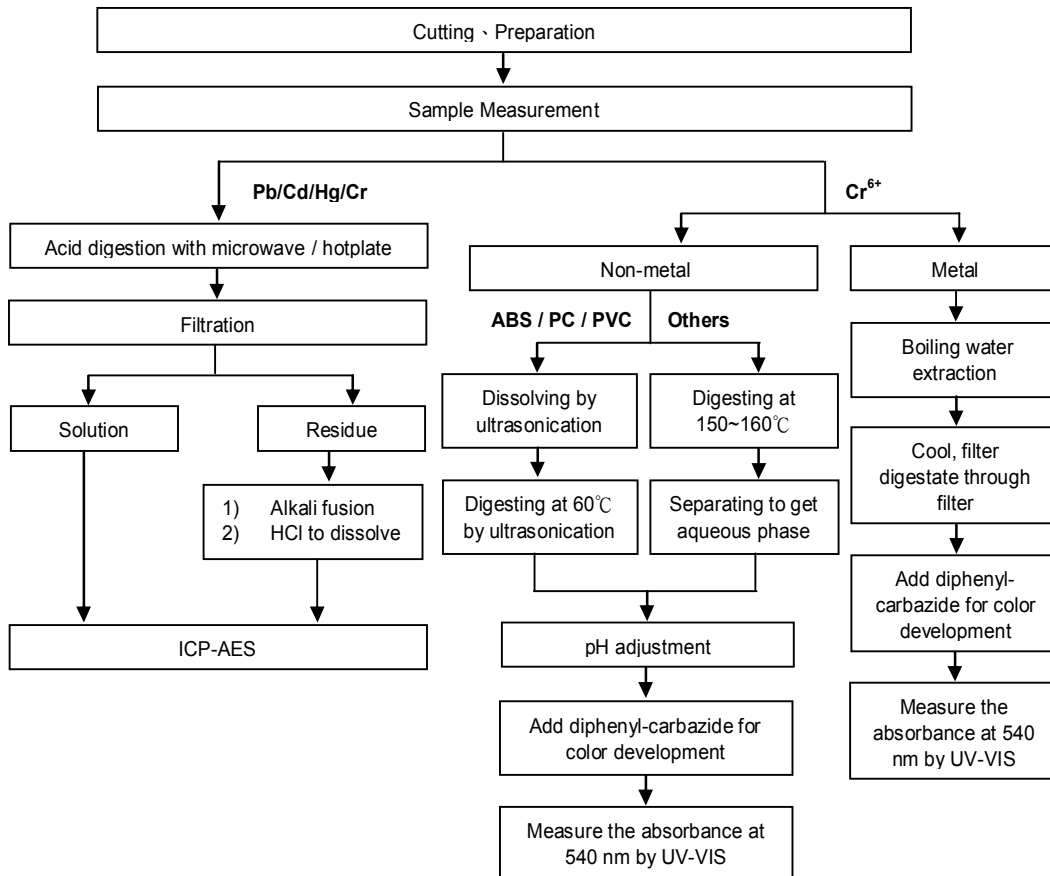
7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



### Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)

- Technician : JR Wang
- Supervisor: Troy Chang



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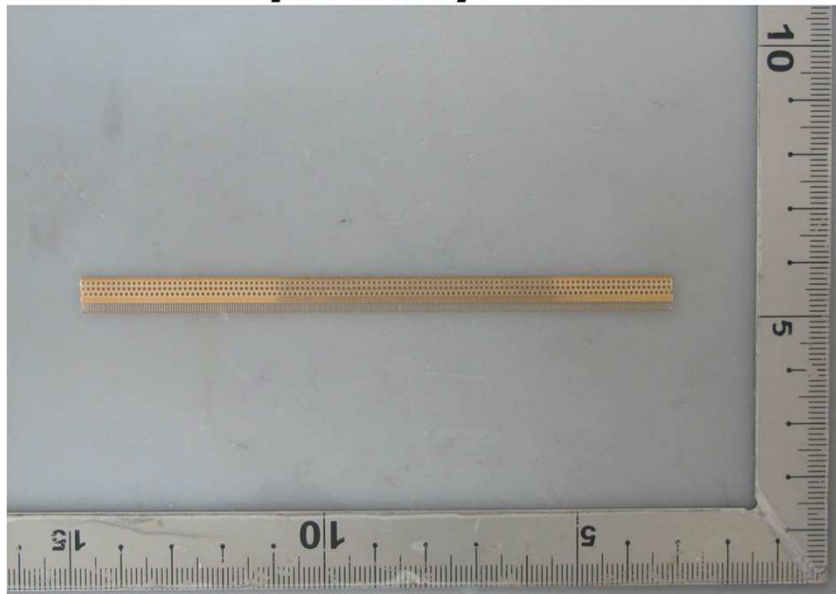
DAI-ICHI SEIKO CO., LTD.

7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



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

### CE/2017/C3495



\*\* End of Report \*\*

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## Test Report

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DAI-ICHI SEIKO CO., LTD.

7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



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

Sample Submitted By : DAI-ICHI SEIKO CO., LTD.  
Sample Description : PLATING(1845-011)  
Style/Item No. : PLATING8(Au/Ni)  
Sample Receiving Date : 2017/12/18  
Testing Period : 2017/12/18 TO 2017/12/22

Test Requested : (1) 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).  
(2) As specified by client, to test PFOS contents in the submitted sample.

Test Result(s) : Please refer to following pages.

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



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# Test Report

No. : CE/2017/C3499

Date : 2017/12/22

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DAI-ICHI SEIKO CO., LTD.

7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



## Test Result(s)

PART NAME No.1 : PLATING LAYER OF SILVER/GOLDEN COLORED METAL SHEET

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	IEC 62321-5 (2013) application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	IEC 62321-5 (2013) application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	IEC 62321-4 (2013) application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)(#2)	µg/cm <sup>2</sup>	With reference to IEC 62321-7-1 (2015) and performed by UV-VIS.	0.10	n.d.
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	µg/m <sup>2</sup>	With reference to US EPA 3550C (2007). Analysis was performed by LC/MS.	1	n.d.

### Note :

1. mg/kg = ppm : 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. (#2) =
  - a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm<sup>2</sup>.  
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/cm<sup>2</sup>).  
The coating is considered a non-Cr(VI) based coating
  - c. The result between 0.10 µg/cm<sup>2</sup> and 0.13 µg/cm<sup>2</sup> is considered to be inconclusive - unavoidable coating variations may influence the determination.

### PFOS Reference Information : POPs - (EU) 757/2010

Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1µg/m<sup>2</sup>.

DAI-ICHI SEIKO CO., LTD.

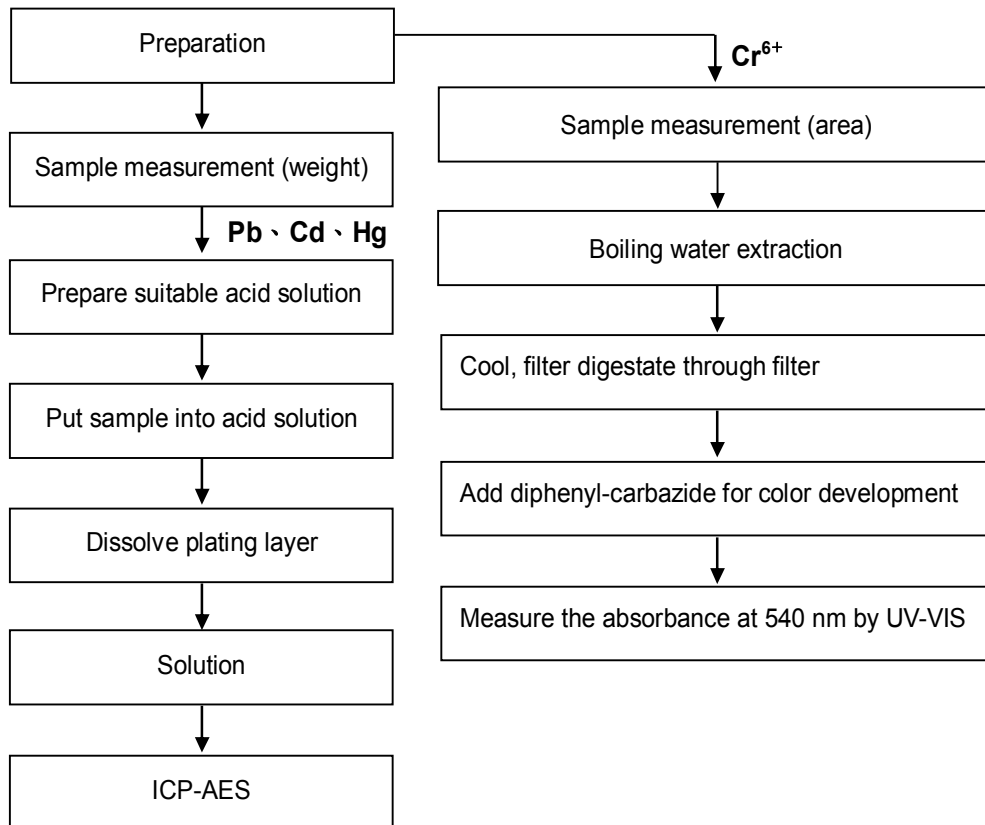
7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



The plating layer of samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)

- Technician: JR Wang
- Supervisor: Troy Chang

### Flow Chart of Stripping method for metal analysis



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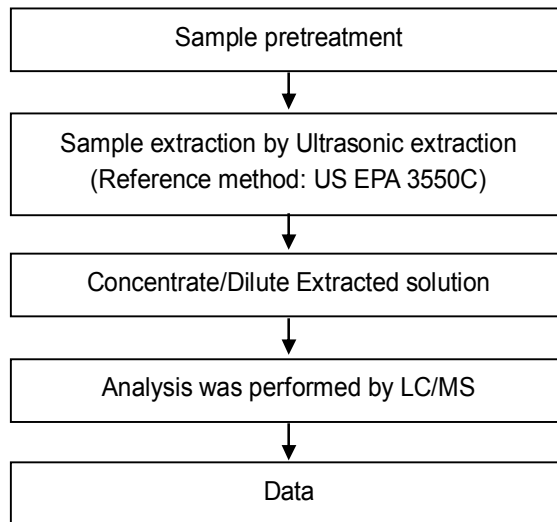
DAI-ICHI SEIKO CO., LTD.

7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



### Analytical flow chart - PFOS

- Technician: Yaling Tu
- Supervisor: Troy Chang



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## Test Report

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Date : 2017/12/22

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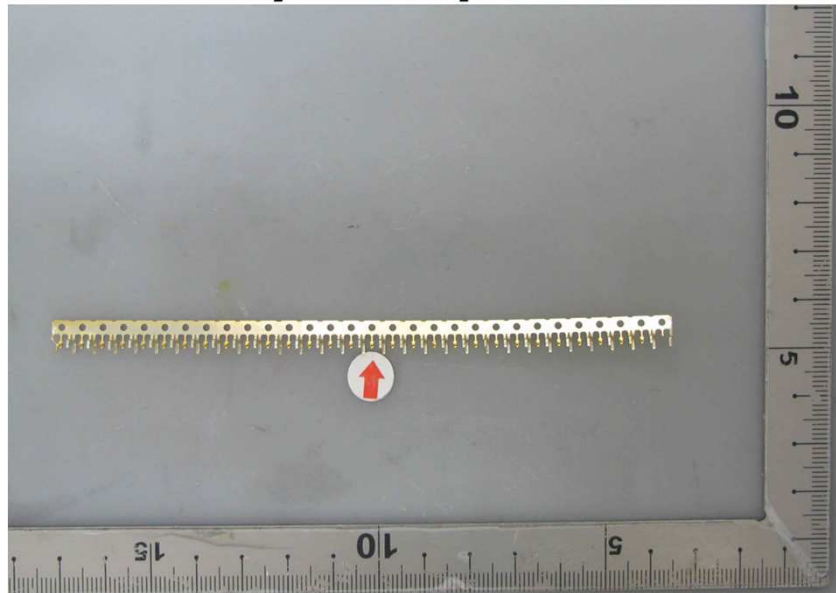
DAI-ICHI SEIKO CO., LTD.

7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.



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

### CE/2017/C3499



\*\* End of Report \*\*



## Test Report 測試報告

Applicant 申請廠商: WONDERFUL HI-TECH CO., LTD.  
No.17, Beiyuan Rd., Zhongli Dist.,  
Taoyuan City 320, Taiwan (R.O.C.)

Number : TWNC00660407  
報告號碼

Date 日期 : Jan 09, 2018

### 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 : WONDERFUL HI-TECH CO., LTD.

送樣廠商 萬泰科技股份有限公司

Sample Description : RF COAXIAL CABLE RG-178 B/U, RG-179/U, RG-316U, RG-58A/U, MINI 0.8mm, 0.98mm,  
樣品名稱 1.13mm, 1.27mm, 1.32mm, 1.37mm, 1.48mm, RF405A, UL 1330, 1331, 1332, 1333,  
1726, 1727, 1867, 1979, 10231, 10064, 10362

Style / Item No. : BLACK, BROWN, RED, ORANGE, YELLOW, GREEN, BLUE, PURPLE, GRAY, WHITE

產品型號

Date Sample Received : Dec 20, 2017

收件日期

Date Test Started : Dec 21, 2017

開始測試日期

### 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.

Authorized by:

On Behalf of Intertek Testing Services

Taiwan Limited



Matt Wang  
Sr. Manager



## Test Report 測試報告

Number : TWNC00660407  
報告號碼

Conclusion 結論 :

Tested Sample

測試樣品

Submitted Samples

送檢樣品

Standard

標準

Restriction Of Hazardous Substances (RoHS) Test  
危害物質限制測試

– 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

As per applicant's Request 依據客戶要求

– Halogen Content

鹵素含量

– Perfluorooctane Sulfonates (PFOS) Content

全氟辛磺酸含量

– Perfluorooctanoic Acid (PFOA)

全氟辛酸含量

– Antimony (Sb) Content

銻含量

– Phthalates

鄰苯二甲酸酯

Result

結果

Pass

合格

See Test Conducted  
請見測試內容

See Test Conducted  
請見測試內容

See Test Conducted  
請見測試內容

See Test Conducted  
請見測試內容

See Test Conducted  
請見測試內容

Test 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  
Sr. Manager



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			RL
			(1)	(2)	(3)	
<b>Heavy Metal 重金屬</b>						
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 <sup>6+</sup> ) 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



Test Conducted 測試內容 :

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果			RL
			(1)	(2)	(3)	
<b>Polybrominated Biphenyls (PBBs) 多溴聯苯</b>						
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
<b>Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚</b>						
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



Test Conducted 測試內容 :

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果			RL
			(1)	(2)	(3)	
<b>Phthalates 鄰苯二甲酸酯</b>						
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
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	ppm		ND	ND	ND	50
Di-n-hexyl phthalate (DNHP) 鄰苯二甲酸二正己酯	ppm		ND	ND	ND	50
<b>Halogen Content 鹵素含量</b>						
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。	466737	486149	511065	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



Test Conducted 測試內容 :

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果			RL
			(1)	(2)	(3)	
<b>Others 其他</b>						
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



Test Conducted 測試內容 :

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果			RL
			(4)	(5)	(6)	
<b>Heavy Metal 重金屬</b>						
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 <sup>6+</sup> ) 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



Test Conducted 測試內容 :

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果			RL
			(4)	(5)	(6)	
<b>Polybrominated Biphenyls (PBBs) 多溴聯苯</b>						
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
<b>Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚</b>						
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





Test Conducted 測試內容 :

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果			RL
			(4)	(5)	(6)	
<b>Phthalates 鄰苯二甲酸酯</b>						
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
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	ppm		ND	ND	ND	50
Di-n-hexyl phthalate (DNHP) 鄰苯二甲酸二正己酯	ppm		ND	ND	ND	50
<b>Halogen Content 鹵素含量</b>						
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。	485254	549283	411209	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



Test Conducted 測試內容 :

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果			RL
			(4)	(5)	(6)	
<b>Others 其他</b>						
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



Test Conducted 測試內容 :

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果				RL
			(7)	(8)	(9)	(10)	
<b>Heavy Metal 重金屬</b>							
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	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	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	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	ND	2
Chromium VI (Cr <sup>6+</sup> ) 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	ND	8



Test Conducted 測試內容 :

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果				RL
			(7)	(8)	(9)	(10)	
<b>Polybrominated Biphenyls (PBBs) 多溴聯苯</b>							
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	ND	5
Dibrominated Biphenyls (DiBB) 二溴聯苯	ppm		ND	ND	ND	ND	5
Tribrominated Biphenyls (TriBB) 三溴聯苯	ppm		ND	ND	ND	ND	5
Tetrabrominated Biphenyls (TetraBB) 四溴聯苯	ppm		ND	ND	ND	ND	5
Pentabrominated Biphenyls (PentaBB) 五溴聯苯	ppm		ND	ND	ND	ND	5
Hexabrominated Biphenyls (HexaBB) 六溴聯苯	ppm		ND	ND	ND	ND	5
Heptabrominated Biphenyls (HeptaBB) 七溴聯苯	ppm		ND	ND	ND	ND	5
Octabrominated Biphenyls (OctaBB) 八溴聯苯	ppm		ND	ND	ND	ND	5
Nonabrominated Biphenyls (NonaBB) 九溴聯苯	ppm		ND	ND	ND	ND	5
Decabrominated Biphenyl (DecaBB) 十溴聯苯	ppm		ND	ND	ND	ND	5
<b>Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚</b>							
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	ND	5
Dibrominated Diphenyl Ethers (DiBDE) 二溴聯苯醚	ppm		ND	ND	ND	ND	5
Tribrominated Diphenyl Ethers (TriBDE) 三溴聯苯醚	ppm		ND	ND	ND	ND	5
Tetrabrominated Diphenyl Ethers (TetraBDE) 四溴聯苯醚	ppm		ND	ND	ND	ND	5
Pentabrominated Diphenyl Ethers (PentaBDE) 五溴聯苯醚	ppm		ND	ND	ND	ND	5
Hexabrominated Diphenyl Ethers (HexaBDE) 六溴聯苯醚	ppm		ND	ND	ND	ND	5
Heptabrominated Diphenyl Ethers (HeptaBDE) 七溴聯苯醚	ppm		ND	ND	ND	ND	5
Octabrominated Diphenyl Ethers (OctaBDE) 八溴聯苯醚	ppm		ND	ND	ND	ND	5
Nonabrominated Diphenyl Ethers (NonaBDE) 九溴聯苯醚	ppm		ND	ND	ND	ND	5
Decabrominated Diphenyl Ether (DecaBDE) 十溴聯苯醚	ppm		ND	ND	ND	ND	5



Test Conducted 測試內容 :

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果				RL
			(7)	(8)	(9)	(10)	
<b>Phthalates 鄰苯二甲酸酯</b>							
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	ND	50
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	ppm		ND	ND	ND	ND	50
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	ppm		ND	ND	ND	ND	50
Di-(Iso-Nonyl) Phthalate (DINP) 鄰苯二甲酸二異壬酯	ppm		ND	ND	ND	ND	50
Di-(Iso-Decyl) Phthalate (DIDP) 鄰苯二甲酸二異癸酯	ppm		ND	ND	ND	ND	50
Di-(N-Octyl) Phthalate (DNOP) 鄰苯二甲酸二辛酯	ppm		ND	ND	ND	ND	50
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	ppm		ND	ND	ND	ND	50
Di-n-hexyl phthalate (DNHP) 鄰苯二甲酸二正己酯	ppm		ND	ND	ND	ND	50
<b>Halogen Content 鹵素含量</b>							
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。	392431	505806	499591	450513	50
Chlorine (Cl) 氯	ppm		ND	ND	ND	ND	50
Bromine (Br) 溴	ppm		ND	ND	ND	ND	50
Iodine (I) 碘	ppm		ND	ND	ND	ND	50



Test Conducted 測試內容 :

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果				RL
			(7)	(8)	(9)	(10)	
<b>Others 其他</b>							
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	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	ND	0.01

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 : Pely Hsiao/ Vita Fu

Date Sample Received 樣品收件日期 : Dec 20, 2017  
Test Period 樣品測試期間 : Dec 21, 2017 to Jan 03, 2018

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 <sup>6+</sup> ) 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。

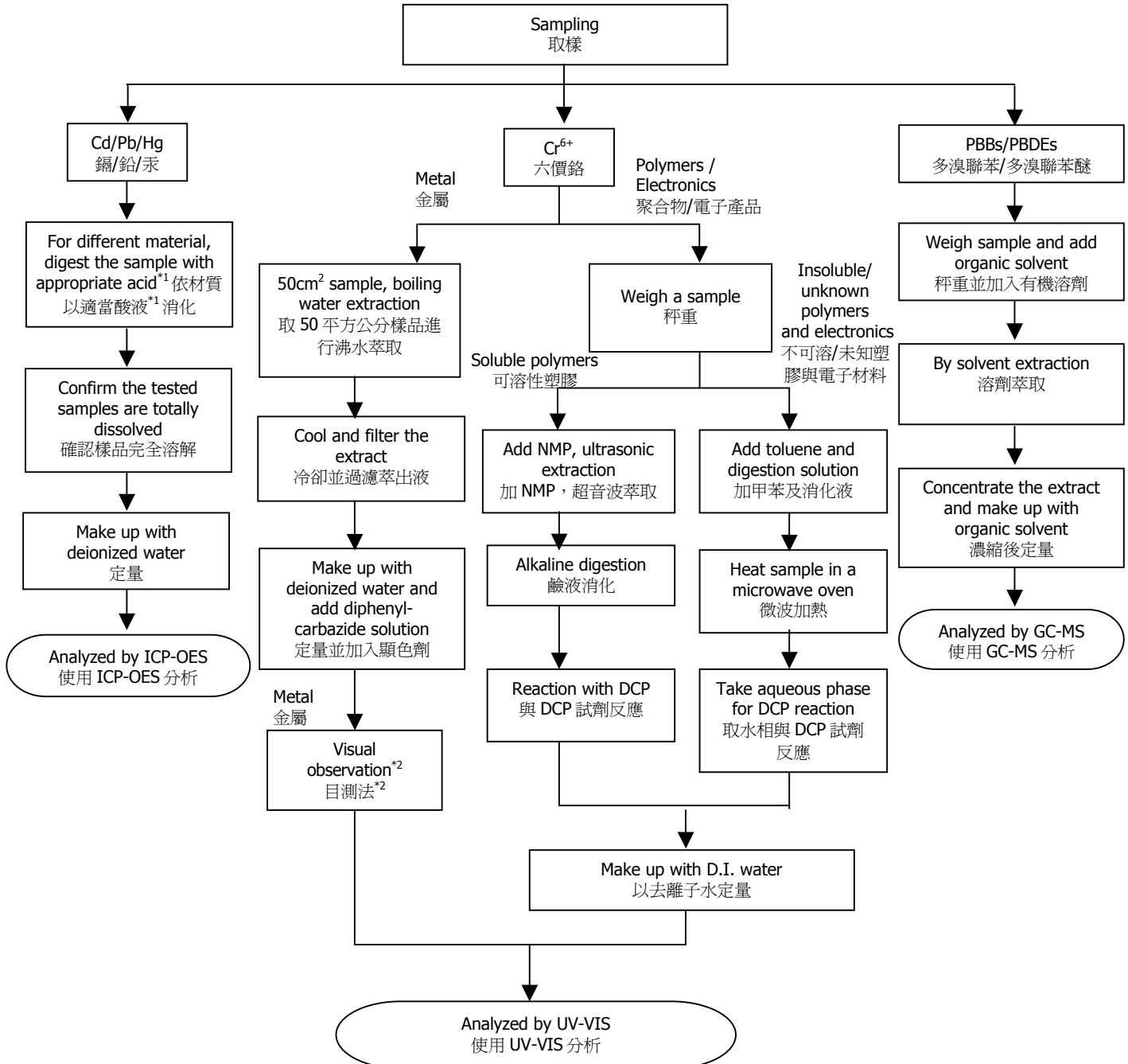


Test Conducted 測試內容 :

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



Test Conducted 測試內容 :

Remark 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 <sub>3</sub> ,HCl,HF,H <sub>2</sub> O <sub>2</sub> ,H <sub>3</sub> BO <sub>3</sub> 硝酸、鹽酸、氫氟酸、雙氧水、硼酸
Metals 金屬	HNO <sub>3</sub> ,HCl,HF 硝酸、鹽酸、氫氟酸
Electronics 電子產品	HNO <sub>3</sub> ,HCl,H <sub>2</sub> O <sub>2</sub> ,HBF <sub>4</sub> 硝酸、鹽酸、雙氧水、氟硼酸

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



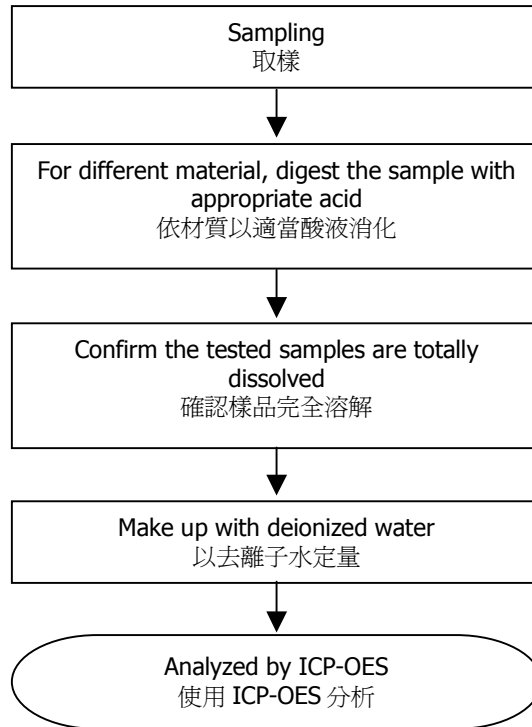


Test Conducted 測試內容 :

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

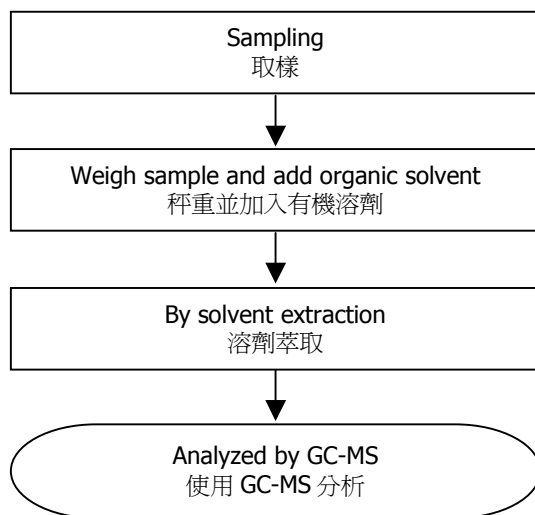


Test Conducted 測試內容 :

Measurement Flowchart 測試流程圖:

Test for Phthalates Content 鄰苯二甲酸酯測試

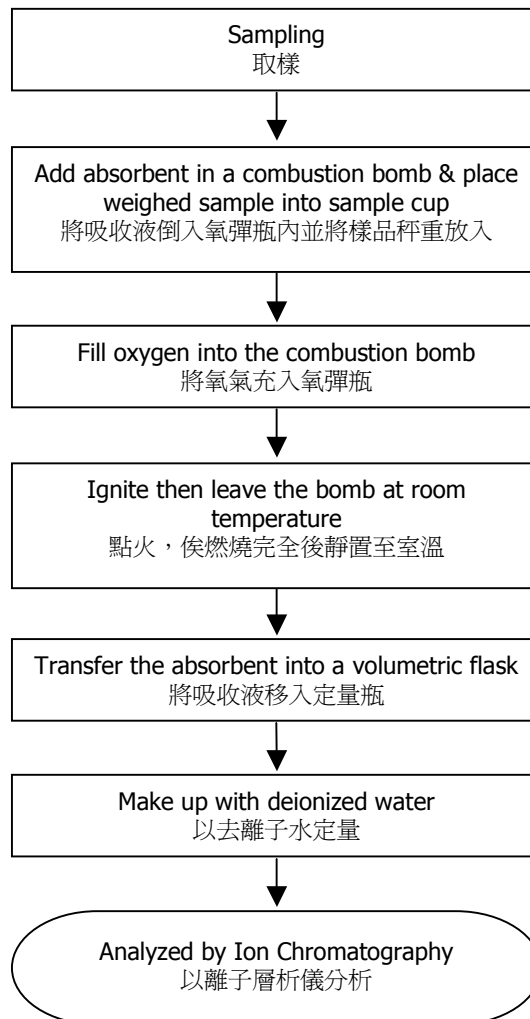
Reference Method 參考方法: IEC 62321-8:2017



Test Conducted 測試內容 :

Measurement Flowchart 測試流程圖:

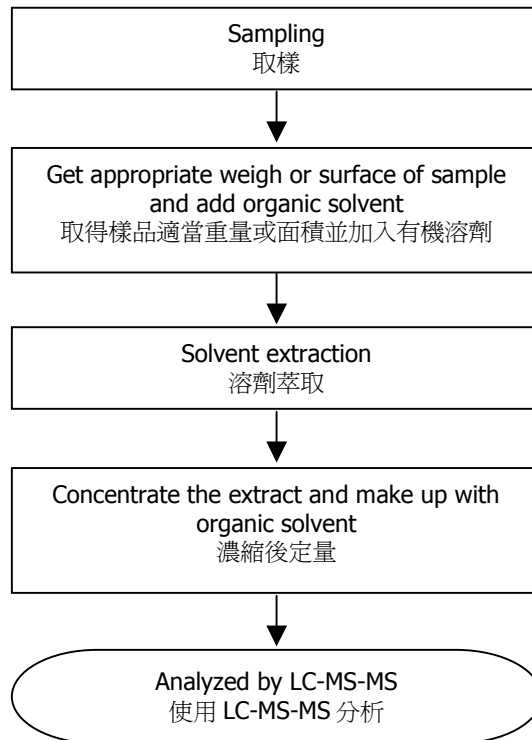
Test for Halogen Content 鹵素測試  
Reference Method 參考方法 : EN 14582

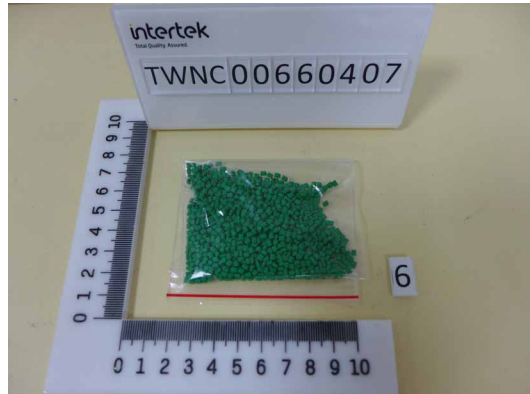
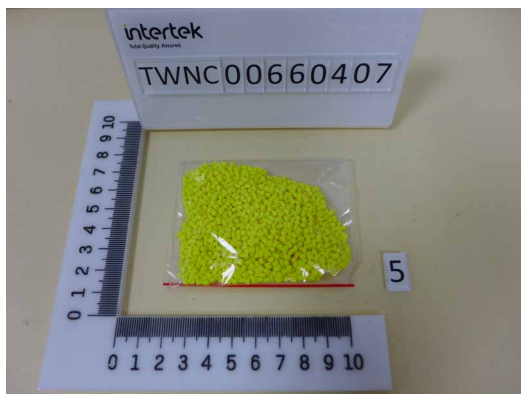


Test Conducted 測試內容 :

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







End of Report

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## Test Report 測試報告

Applicant 申請廠商: WONDERFUL HI-TECH CO., LTD.  
No.17, Beiyuan Rd., Zhongli Dist.,  
Taoyuan City 320, Taiwan (R.O.C.)

Number : TWNC00660409  
報告號碼

Date 日期 : Jan 09, 2018

### 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 : WONDERFUL HI-TECH CO., LTD.  
送樣廠商 萬泰科技股份有限公司

Sample Description : 鍍銀銅包鋼線, 鍍銀銅線, 鍍錫銅線 (SILVER-PLATED COPPER CLAD STEEL WIRE,  
樣品名稱 SILVER-PLATED COPPER WIRE, TIN-PLATED COPPER WIRE)

Style / Item No. : 裸銅 COPPER/銅包鋼 SILVER-PLATED COPPER CLAD STEEL/鍍銀層 SILVER-PLATED/  
產品型號 鍍錫層 TIN-PLATED

Date Sample Received : Dec 20, 2017  
收件日期

Date Test Started : Dec 21, 2017  
開始測試日期

### 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	Standard	Result
測試樣品	標準	結果
Submitted Samples	Restriction Of Hazardous Substances (RoHS) Test	Pass
送檢樣品	危害物質限制測試	合格
	- As per applicant's request with reference to 2011/65/EU	
	依據客戶要求參考歐盟指令 2011/65/EU	

### Tested Components 測試元件

- (1) Coppery metal (Copper)
- (2) Silvery metal (Silver-plated copper clad steel)
- (3) Silvery metal (Silver-plated)
- (4) Silvery metal (Tin-plated)

Authorized by:  
On Behalf of Intertek Testing Services  
Taiwan Limited



Matt Wang  
Sr. Manager



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				RL
			(1)	(2)	(3)	(4)	
<b>Heavy Metal 重金屬</b>							
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	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	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+A MD1: 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	ND	2
Chromium VI (Cr <sup>6+</sup> ) Content 六價鉻含量 @	µg/cm <sup>2</sup>	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	Negative	Negative	0.10

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  
# = Due to insufficient sample area, a reduced total sample surface was used and the ratio of total sample surface to extraction volume was kept at 1 cm<sup>2</sup> : 1 ml.  
樣品面積不足, 減少測試取樣面積, 並調整萃取液比例為 1 平方公分 : 1 毫升。





Test Conducted 測試內容 :

@ The explanation of Chromium VI (Cr<sup>6+</sup>) analysis results 六價鉻分析結果說明

<u>Colorimetric result</u> 比色結果	<u>Qualitative Result</u> 定性結果	<u>Explanation</u> 說明
< 0.10 µg/cm <sup>2</sup>	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 <sup>2</sup> and ≤ 0.13 µg/cm <sup>2</sup>	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 <sup>2</sup>	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 : Pely Hsiao

Date Sample Received 樣品收件日期 : Dec 20, 2017

Test Period 樣品測試期間 : Dec 21, 2017 to Dec 27, 2017

RoHS Limit RoHS 限值

<u>Restricted Substances</u> 限用物質	<u>Limits</u> 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 <sup>6+</sup> ) 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)

The limits were quoted from Annex II of 2011/65/EU for homogeneous material.

本限值是依據歐盟指令 2011/65/EU 附錄二針對均質材質所訂定。



Test Conducted 測試內容 :

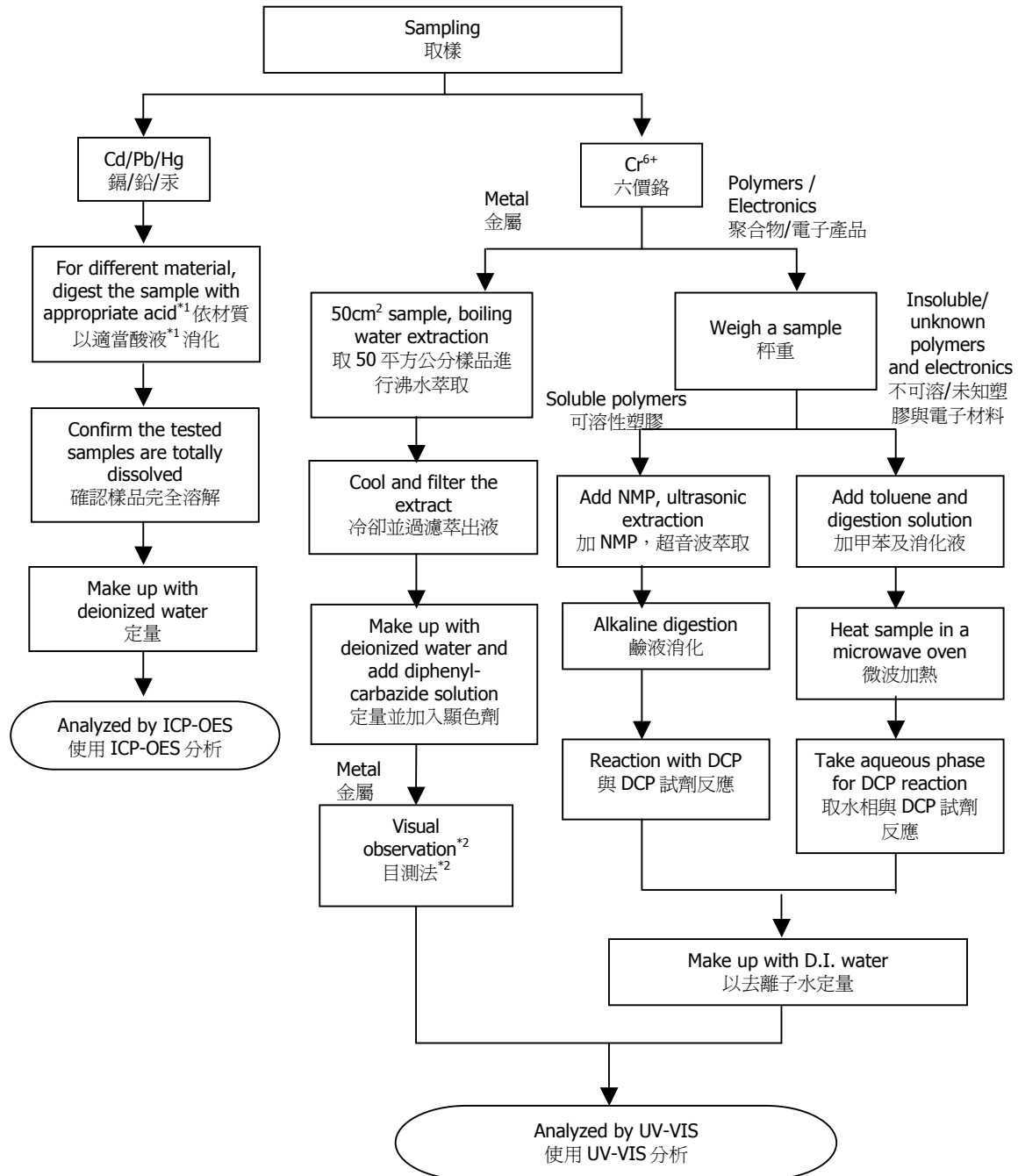
Measurement Flowchart 測試流程圖:

Test For Cd/Pb/Hg/Chromium (VI) Content RoHS 四項測試

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)



Test Conducted 測試內容 :

Remarks 備註:

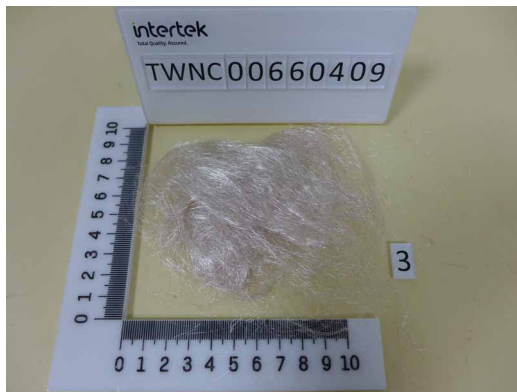
\*1: List of Appropriate Acid 各材質添加酸液如下表 :

Material 材質	Acid Added for Digestion 添加酸液種類
Polymers 聚合物	HNO <sub>3</sub> ,HCl,HF,H <sub>2</sub> O <sub>2</sub> ,H <sub>3</sub> BO <sub>3</sub> 硝酸、鹽酸、氫氟酸、雙氧水、硼酸
Metals 金屬	HNO <sub>3</sub> ,HCl,HF 硝酸、鹽酸、氫氟酸
Electronics 電子產品	HNO <sub>3</sub> ,HCl,H <sub>2</sub> O <sub>2</sub> ,HBF <sub>4</sub> 硝酸、鹽酸、雙氧水、氟硼酸

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





End of Report

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## 测试报告

No. SHAEC1716150902

日期: 2017年07月31日 第1页,共11页

大金氟化工(中国)有限公司  
中国江苏省常熟市新材料产业园西金虞路8号

以下测试之样品是由申请者所提供及确认: NEOFロン FEP

SGS工作编号: SP17-026239 - SH  
型号: NP-3180  
样品接收日期: 2017年07月26日  
测试周期: 2017年07月26日 - 2017年07月31日  
测试要求: 根据客户要求测试  
测试方法: 请参见下一页  
测试结果: 请参见下一页

结论: 基于所送样品进行的测试, 镉、铅、汞、六价铬、多溴联苯(PBBs)、多溴二苯醚(PBDEs)、邻苯二甲酸酯(如邻苯二甲酸二丁酯(DBP)、邻苯二甲酸丁苯酯(BBP)、邻苯二甲酸二(2-乙基己基)酯(DEHP)和邻苯二甲酸二异丁酯(DIBP))的测试结果符合欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

通标标准技术服务(上海)有限公司  
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Marry Ma 马广媛  
批准签署人

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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](mailto:sgs.china@sgs.com)

## 测试报告

No. SHAEC1716150902

日期: 2017年07月31日 第2页,共11页

测试结果:

### 测试样品描述:

样品编号	SGS样品ID	描述
SN1	SHA17-161509.001	透明固体颗粒

备注:

- (1) 1 mg/kg = 0.0001%
- (2) MDL = 方法检测限
- (3) ND = 未检出 (< MDL)
- (4) "-" = 未规定

### RoHS 指令2011/65/EU附录II的修正指令(EU) 2015/863

- 测试方法:
- (1) 参考IEC 62321-5:2013, 用ICP-OES测定镉的含量
  - (2) 参考IEC 62321-5:2013, 用ICP-OES测定铅的含量
  - (3) 参考IEC 62321-4:2013, 用ICP-OES测定汞的含量
  - (4) 参考IEC 62321-7-2:2017, 用UV-Vis分析六价铬含量和/或者参考IEC 62321-5:2013, 用ICP-OES测试总铬含量
  - (5) 参考IEC 62321-6:2015, 用GC-MS测定PBBs(多溴联苯)和PBDEs(多溴二苯醚) 的含量
  - (6) 参考IEC 62321-8:2017, 用GC-MS测定邻苯二甲酸酯的含量

测试项目	限值	单位	MDL	001
镉(Cd)	100	mg/kg	2	ND
铅(Pb)	1000	mg/kg	2	ND
汞(Hg)	1000	mg/kg	2	ND
六价铬 (Cr(VI))	1000	mg/kg	8	ND
多溴联苯之和(PBBs)	1000	mg/kg	-	ND
一溴联苯	-	mg/kg	5	ND
二溴联苯	-	mg/kg	5	ND
三溴联苯	-	mg/kg	5	ND
四溴联苯	-	mg/kg	5	ND
五溴联苯	-	mg/kg	5	ND
六溴联苯	-	mg/kg	5	ND
七溴联苯	-	mg/kg	5	ND
八溴联苯	-	mg/kg	5	ND
九溴联苯	-	mg/kg	5	ND
十溴联苯	-	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	1000	mg/kg	-	ND



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## 测试报告

No. SHAEC1716150902

日期: 2017年07月31日 第3页,共11页

测试项目	限值	单位	MDL	001
一溴二苯醚	-	mg/kg	5	ND
二溴二苯醚	-	mg/kg	5	ND
三溴二苯醚	-	mg/kg	5	ND
四溴二苯醚	-	mg/kg	5	ND
五溴二苯醚	-	mg/kg	5	ND
六溴二苯醚	-	mg/kg	5	ND
七溴二苯醚	-	mg/kg	5	ND
八溴二苯醚	-	mg/kg	5	ND
九溴二苯醚	-	mg/kg	5	ND
十溴二苯醚	-	mg/kg	5	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND
邻苯二甲酸丁苄酯(BBP)	1000	mg/kg	50	ND
邻苯二甲酸二(2-乙基己基)酯(DEHP)	1000	mg/kg	50	ND
邻苯二甲酸二异丁酯(DIBP)	1000	mg/kg	50	ND

### 备注:

- (1) 最大允许极限值引用自RoHS指令(EU) 2015/863 。  
IEC 62321系列等同于 EN 62321 系列  
[http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:1258637,25](http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25)
- (2) 检测的铬(Cr)含量是“ND”，则六价铬(Cr(VI))含量也是“ND”，不需要进行六价铬(Cr(VI))的确认性测试。
- (3) 若铬(Cr)含量超过方法检出限，需要进行六价铬(Cr(VI))的确认性测试。
- (4) 2015年6月4号发表在欧盟官方杂志（官方公报）上的RoHS指令(EU) 2015/863 附录II限值中还包括邻苯二甲酸酯BBP, DBP, DEHP和DIBP。新的指令限制了电子电器产品的每一个均一材质中邻苯二甲酸酯含量不得超过0.1%。
- (5) 2021年7月22号开始，DEHP, BBP, DBP 和 DIBP的限制适用于医疗器械，包括体外医疗器械，监控仪表，包括工业监测和控制仪器。
- (6) DEHP, BBP, DBP 和 DIBP的限制不适用于2019年7月22日前投放市场的电缆及电子电气产品中用于维修、重复利用、功能更新及容量提升的备用配件以及2021年7月22日前投放市场的医疗器械，包括体外医疗器械，监控仪表，包括工业监测和控制仪器。
- (7) DEHP、BBP 和 DBP的限制不适用于玩具产品，因为No.1907/2006 附录XVII第51条已对玩具产品中的DEHP、BBP 和 DBP含量进行了限制。

### 卤素

测试方法： 参照EN 14582:2007 方法测定, 采用IC进行分析。



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## 测试报告

No. SHAEC1716150902

日期: 2017年07月31日 第4页,共11页

测试项目	单位	MDL	001
氟(F)	mg/kg	50	>100000
氯(Cl)	mg/kg	50	ND
溴(Br)	mg/kg	50	ND
碘(I)	mg/kg	50	ND

## 元素

测试方法: 参照ASTM D 4004-06(2012). 采用ICP-OES进行分析.

测试项目	单位	MDL	001
锑 (Sb)	mg/kg	50	ND

## 六溴环十二烷(HBCDD)

测试方法: 参照US EPA 3550C: 2007 方法测定, 采用GC-MS进行分析.

测试项目	CAS NO.	单位	MDL	001
六溴环十二烷 (HBCDD)	25637-99-4, 3194- 55-6	mg/kg	10	ND

## 短链氯化石蜡(SCCP)(C<sub>10</sub>-C<sub>13</sub>)

测试方法: 参照ISO 18219: 2015 方法测定, 采用GC-NCI-MS进行分析.

测试项目	单位	MDL	001
短链氯化石蜡(SCCP) (C <sub>10</sub> -C <sub>13</sub> )	mg/kg	50	ND

## 全氟辛烷磺酸 (PFOS)和全氟辛酸(PFOA)



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## 测试报告

No. SHAEC1716150902

日期: 2017年07月31日 第5页,共11页

测试方法: 参照US EPA 3550C: 2007. 采用HPLC-MS测试.

测试项目	限值	单位	MDL	001
全氟辛烷磺酸(PFOS)及衍生物^	1000	mg/kg	10	ND
全氟辛酸 (PFOA)	-	mg/kg	10	ND

### 备注:

- (1) 最大允许限制引用自(EC) No. 850/2004 的修订指令欧盟决议(EU) No. 757/2010.
- (2) ^= PFOS 包含全氟辛烷磺酸(PFOS), 全氟辛基磺酰胺(PFOA), 2-(N-乙基全氟辛基磺酰胺)乙醇(EtFOSE), N-甲基全氟辛烷磺酰胺(MeFOA), N-乙基全氟辛烷磺酰胺(EtFOA) 和2-(N-甲基全氟辛基磺酰胺)乙醇(MeFOSE)。



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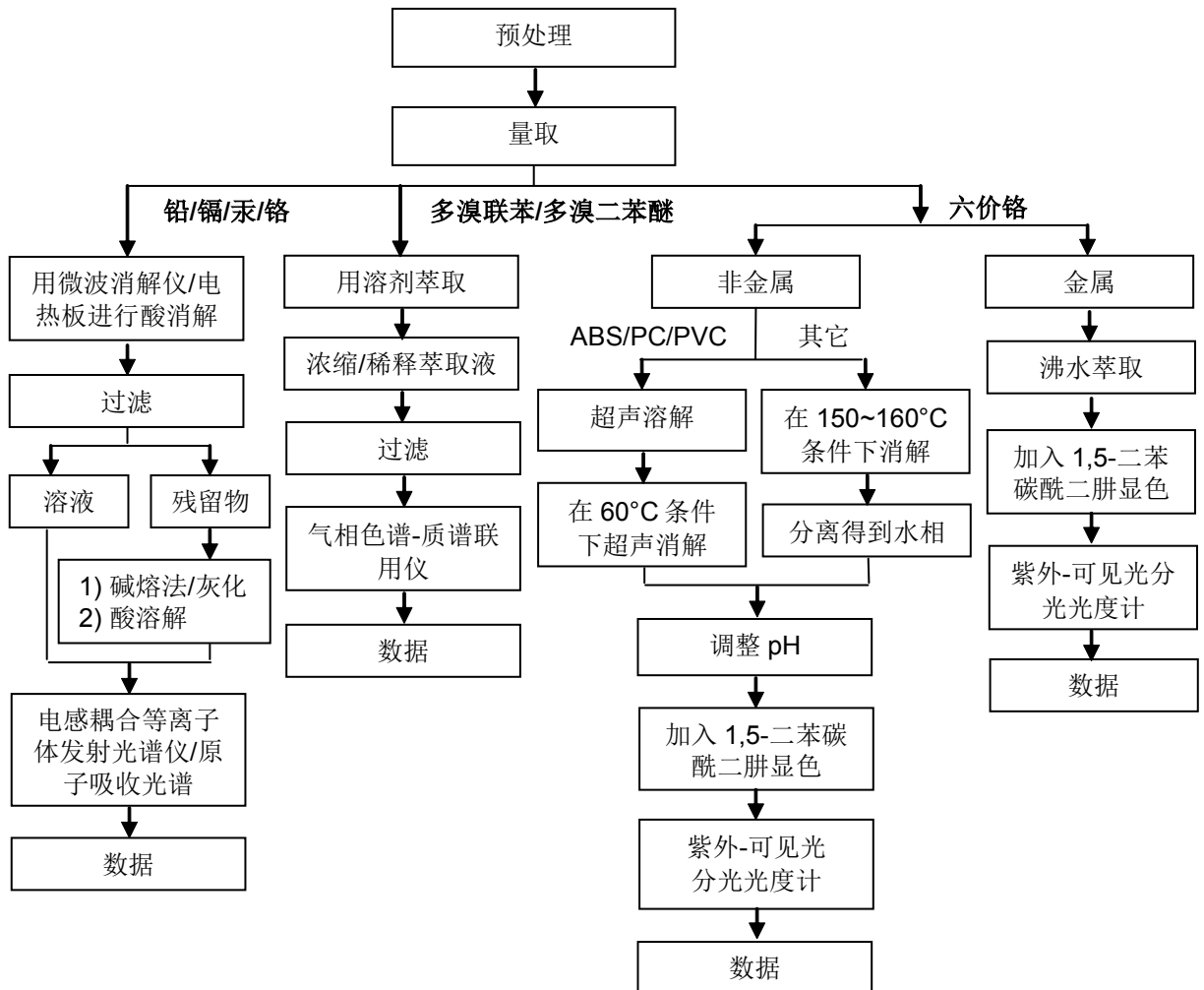
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附件

## Pb/Cd/Hg/Cr<sup>6+</sup>/PBBs/PBDEs 测试流程图

- 1) 分析人员: 金叶/徐刚/陈玮卿 /宋珂静
- 2) 项目负责人: 施青/黄婷/徐亮/王晓艳
- 3) 样品按照下述流程被完全消解(六价铬和多溴联苯/多溴二苯醚测试除外)。



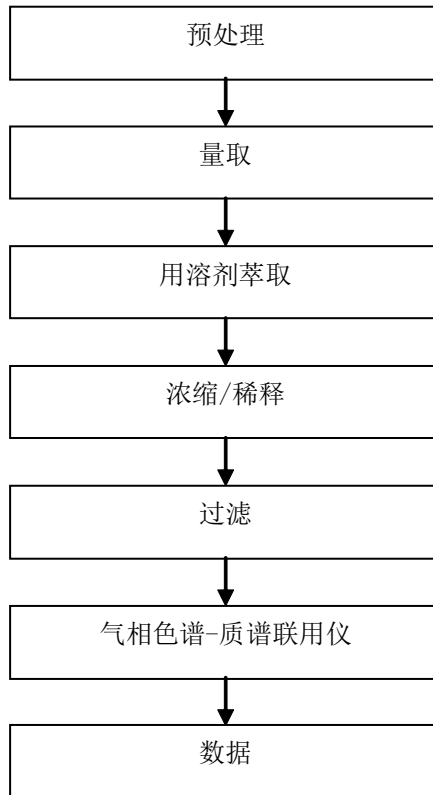
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### Phthalates 测试流程图

- 1) 分析人员: 高仰景
- 2) 项目负责人: 黄婷



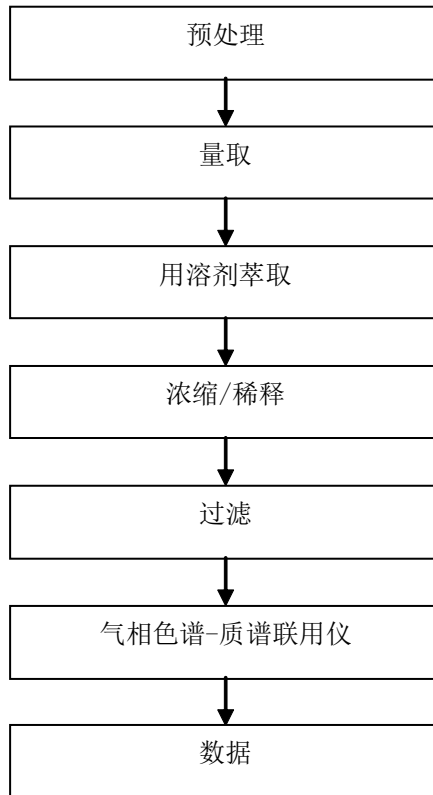
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附件

### HBCDD 测试流程图

- 1) 分析人员: 徐刚
- 2) 项目负责人: 黄婷



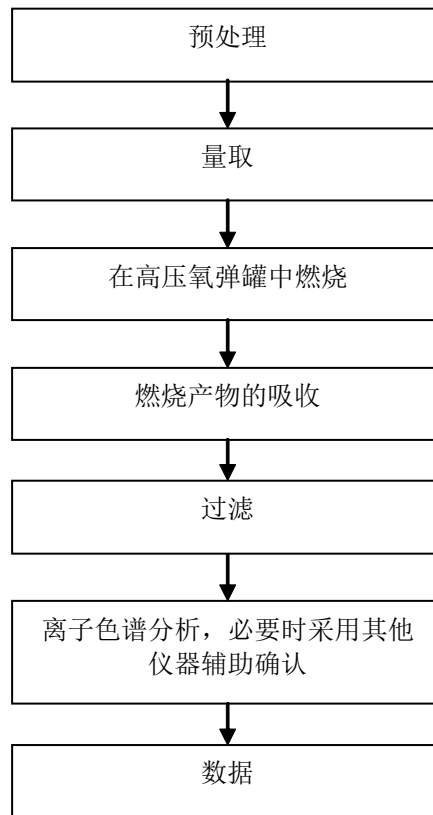
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附件

### Halogen(氧弹法)测试流程图

- 1) 分析人员: 徐诚
- 2) 项目负责人: 印宇



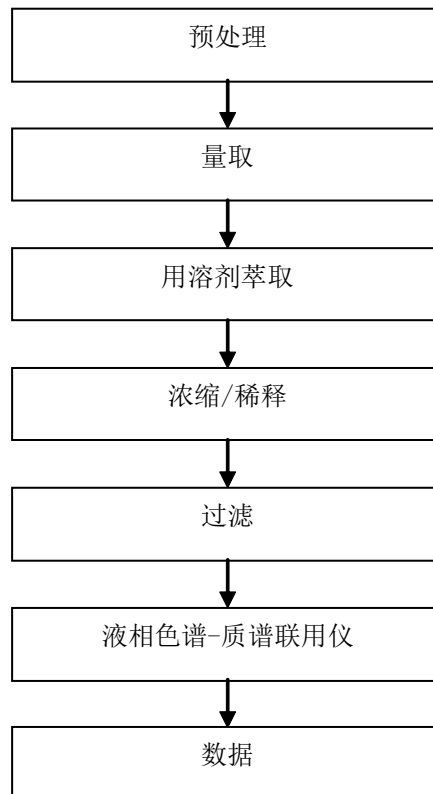
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附件

### PFOS/PFOA 测试流程图

- 1) 分析人员: 杨占君
- 2) 项目负责人: 马永存



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## 測試報告

## Test Report

號碼(No.) : CE/2017/11010

日期(Date) : 2017/01/13

頁數(Page): 1 of 9

台灣明尼蘇達礦業製造股份有限公司  
3M TAIWAN LTD.

桃園市楊梅區中山南路800巷66號

NO. 66, LANE 800, CHUNG-SHAN S. RD., YANG-MEI 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/on behalf of the applicant as) :

送樣廠商(Sample Submitted By) : 台灣明尼蘇達礦業製造股份有限公司 (3M TAIWAN LTD.)  
樣品名稱(Sample Description) : 3M TISSUE TAPE  
樣品型號(Style/Item No.) : 9888T, 9810T, 9815, 1815, 9516, 9183, 9183T, 6408, 9080HL, 9080T, 9448HK  
收件日期(Sample Receiving Date) : 2017/01/06  
測試期間(Testing Period) : 2017/01/06 TO 2017/01/13

### 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.)
- (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) : 請見下一頁 (Please refer to next pages).

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





# 測試報告

# Test Report

號碼(No.) : CE/2017/11010

日期(Date) : 2017/01/13

頁數(Page): 2 of 9

台灣明尼蘇達礦業製造股份有限公司  
3M TAIWAN LTD.

桃園市楊梅區中山南路800巷66號

NO. 66, LANE 800, CHUNG-SHAN S. RD., YANG-MEI DISTRICT, TAOYUAN CITY 326, TAIWAN (R. O. C.)



## 測試結果(Test Results)

測試部位(PART NAME)No. 1 : 透明雙面膠帶 (不含離型紙) (TRANSPARENT TWIN ADHESIVE TAPE (EXCLUDING THE RELEASE PAPER))

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				No. 1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321-5 (2013), 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n. d.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321-5 (2013), 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n. d.
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4 (2013), 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-4 (2013) and performed by ICP-AES.	2	n. d.
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考IEC 62321 (2008) - Annex C, 以UV-VIS檢測. / With reference to IEC 62321 (2008) - Annex C and performed by UV-VIS.	2	n. d.
<b>鹵素 / Halogen</b>				
鹵素 (氟) / Halogen-Fluorine (F) (CAS No. : 14762-94-8)	mg/kg	參考BS EN 14582 (2007), 以離子層析儀分析. / With reference to BS EN 14582 (2007). Analysis was performed by IC.	50	n. d.
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No. : 22537-15-1)	mg/kg		50	n. d.
鹵素 (溴) / Halogen-Bromine (Br) (CAS No. : 10097-32-2)	mg/kg		50	n. d.
鹵素 (碘) / Halogen-Iodine (I) (CAS No. : 14362-44-8)	mg/kg		50	n. d.

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# 測試報告

# Test Report

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台灣明尼蘇達礦業製造股份有限公司  
3M TAIWAN LTD.

桃園市楊梅區中山南路800巷66號

NO. 66, LANE 800, CHUNG-SHAN S. RD., YANG-MEI DISTRICT, TAOYUAN CITY 326, TAIWAN (R. O. C.)



測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				No. 1
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321-6 (2015), 以氣相層析 /質譜儀檢測. / With reference to IEC 62321-6 (2015) and performed by GC/MS.	-	n. d.
一溴聯苯 / Monobromobiphenyl	mg/kg		5	n. d.
二溴聯苯 / Dibromobiphenyl	mg/kg		5	n. d.
三溴聯苯 / Tribromobiphenyl	mg/kg		5	n. d.
四溴聯苯 / Tetrabromobiphenyl	mg/kg		5	n. d.
五溴聯苯 / Pentabromobiphenyl	mg/kg		5	n. d.
六溴聯苯 / Hexabromobiphenyl	mg/kg		5	n. d.
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n. d.
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n. d.
九溴聯苯 / Nonabromobiphenyl	mg/kg		5	n. d.
十溴聯苯 / Decabromobiphenyl	mg/kg		5	n. d.
多溴聯苯醚總和 / Sum of PBDEs	mg/kg		-	n. d.
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.	
鄰苯二甲酸二異丁酯 / DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	mg/kg	參考IEC 62321-8/CD (2013), 以氣相 層析儀/質譜儀檢測. / With reference to IEC 62321-8/CD (2013). Analysis was performed by GC/MS.	50	n. d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg		50	n. d.
鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg		50	n. d.

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# 測試報告

# Test Report

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台灣明尼蘇達礦業製造股份有限公司  
3M TAIWAN LTD.

桃園市楊梅區中山南路800巷66號

NO. 66, LANE 800, CHUNG-SHAN S. RD., YANG-MEI DISTRICT, TAOYUAN CITY 326, TAIWAN (R. O. C.)



測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				No. 1
鄰苯二甲酸二(2-乙基己基)酯 / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg	參考IEC 62321-8/CD (2013), 以氣相 層析儀/質譜儀檢測. / With reference to IEC 62321-8/CD (2013). Analysis was performed by GC/MS.	50	n. d.
鄰苯二甲酸二正辛酯 / DNOP (Di-n- octyl phthalate) (CAS No.: 117-84-0)	mg/kg		50	n. d.
鄰苯二甲酸二異壬酯 / DINP (Di- isononyl phthalate) (CAS No.: 28553- 12-0; 68515-48-0)	mg/kg		50	n. d.
鄰苯二甲酸二異癸酯 / DIDP (Di- isodecyl phthalate) (CAS No.: 26761- 40-0; 68515-49-1)	mg/kg		50	n. d.

### 備註(Note) :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n. d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. "-" = Not Regulated (無規格值)

## 測試報告 Test Report

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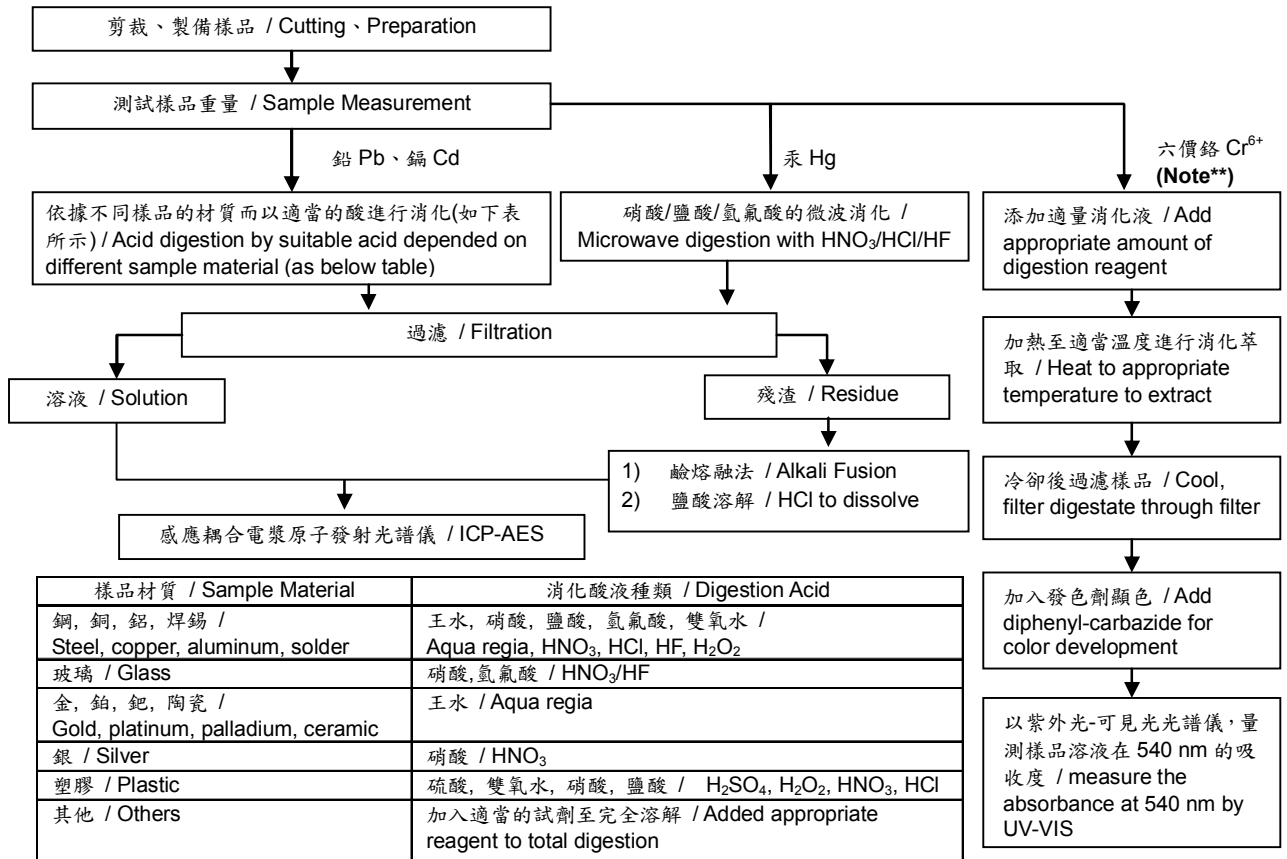


### 重金屬流程圖 / Analytical flow chart of Heavy Metal

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<sup>6+</sup> test method excluded)

- 測試人員：王志璋 / Technician : JR Wang
- 測試負責人：張啟興 / Supervisor: Troy Chang



**Note\*\* (For IEC 62321)**

- (1) 針對非金屬材料加入鹼性消化液，加熱至 90~95°C 萃取。 / For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.
- (2) 針對金屬材料加入純水，加熱至沸騰萃取。 / For metallic material, add pure water and heat to boiling.

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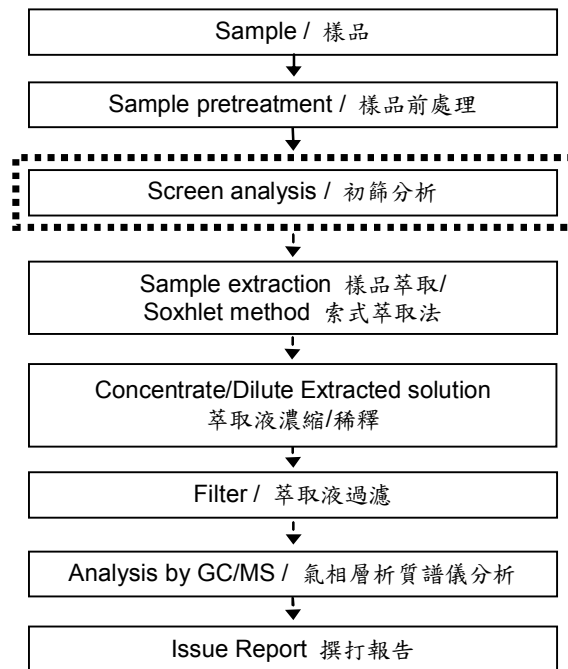
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### 多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBB/PBDE

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

初次測試程序 / First testing process —————>  
 選擇性篩檢程序 / Optional screen process .....  
 確認程序 / Confirmation process - - - .>



## 測試報告

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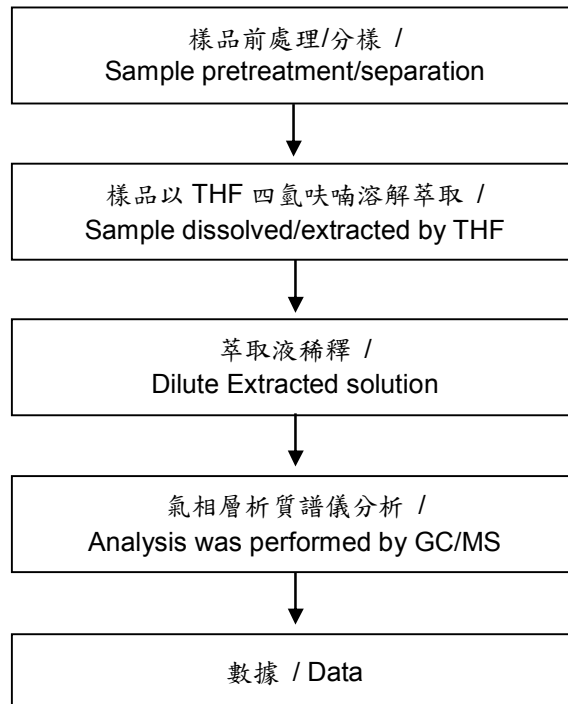
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### 可塑劑分析流程圖 / Analytical flow chart - Phthalate

- 測試人員：徐毓明 / Technician: Andy Shu
- 測試負責人：張啟興 / Supervisor : Troy Chang

#### **【測試方法/Test method: IEC 62321-8】**



## 測試報告

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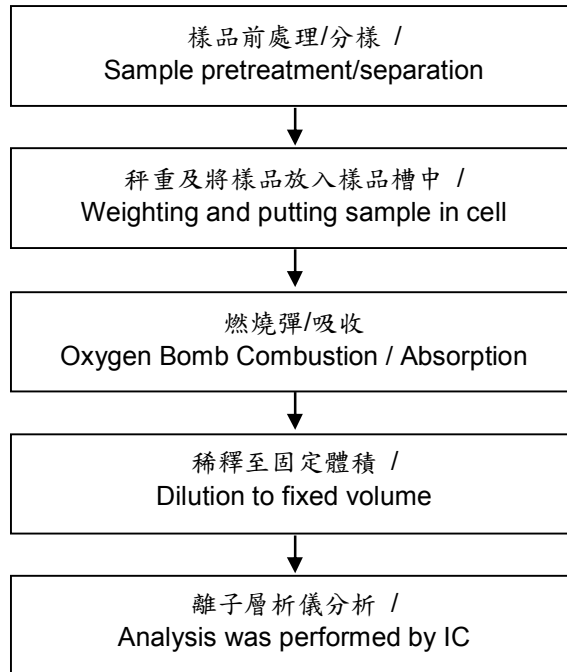
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### 鹵素分析流程圖 / Analytical flow chart - Halogen

- 測試人員：陳恩臻 / Technician: Rita Chen
- 測試負責人：張啟興 / Supervisor: Troy Chang



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## 測試報告

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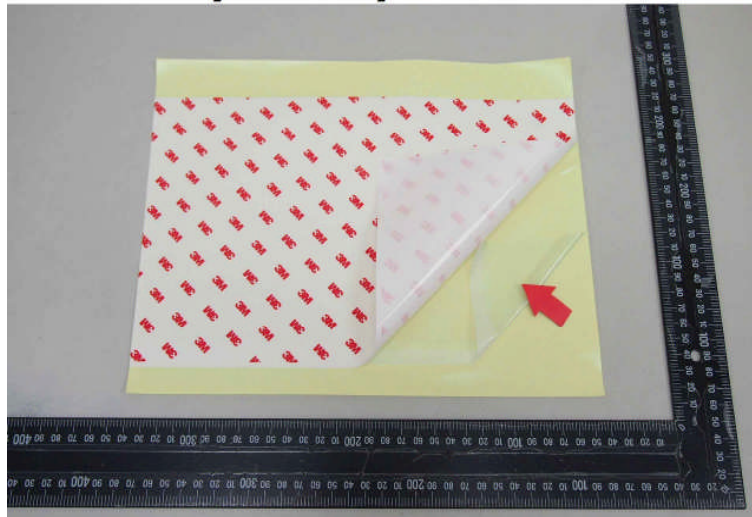
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\* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。 \*  
(The tested sample / part is marked by an arrow if it's shown on the photo.)

### CE/2017/11010



\*\* 報告結尾 (End of Report) \*\*



# 檢測報告 Test Report

報告編號 ECL01J081203002E  
Report No. ECL01J081203002E

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Page 1 of 6

申請單位 威萬有限公司  
Applicant WELL ONE COMPANY  
地址 32846 桃園市觀音區崙坪里 1 鄰崙坪 1-34 號  
Address NO. 1-34,LUNPING,GUANYIN DIST. ,TAOYUAN CITY 32846,TAIWAN

以下測試之樣品及樣品信息由申請者提供並確認 The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

樣品名稱 熱縮套管  
Sample Name HEAT SHRINKABLE TUBING  
樣品顏色 透明  
Color CLEAR  
材料名稱 聚乙烯  
Material POLYOLEFIN  
客戶參考信息 GT-2,GT-4, GT-0,LP-C  
Client Reference Information GT-2,GT-4, GT-0,LP-C  
樣品接收日期 2017.12.18  
Sample Received Date Dec. 18, 2017  
樣品檢測日期 2017.12.18-2017.12.21  
Testing Period Dec. 18, 2017 to Dec. 21, 2017  
檢測要求 根據客戶要求，對所提交樣品中的鉛(Pb)，鎘(Cd)，汞(Hg)，六價鉻(Cr(VI))，多溴聯苯(PBBs)，多溴二苯醚(PBDEs)進行測試。  
Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs) in the submitted sample(s).  
檢測依據和檢測結果 請參見下頁  
Test Method & Test Result(s) Please refer to following page(s).

主 檢  
Tested by

劉杰

審 核  
Reviewed by

董桐民

批 准  
Approved by

蘇紅偉

日 期  
Date

2017.12.21

實驗室高級經理 Senior Laboratory Manager

上海華測品標檢測技術有限公司

Centre Testing International Pinbiao(Shanghai) Co., Ltd.

No. T172797742

上海市浦東新區新金橋路 1996 號

No.1996,Xinjinqiao Road, Pudong New District,Shanghai,China

# 檢測報告

## Test Report

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### 檢測依據 Test Method

測試項目 Tested Item(s)	測試方法 Test Method	測試儀器 Measured Equipment(s)
鉛(Pb) Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES
鎘(Cd) Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES
汞(Hg) Mercury (Hg)	IEC 62321-4:2013 Ed.1.0	ICP-OES
六價鉻(Cr(VI)) Hexavalent Chromium (Cr(VI))	IEC 62321-7-2:2017 和/ 或 IEC 62321-5:2013 Ed.1.0 測試總鉻 含量 IEC 62321-7-2:2017 and/ or determination of Total Chromium by IEC 62321-5:2013 Ed.1.0	UV-Vis/ICP-OES
多溴聯苯(PBBs) Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚(PBDEs) Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS

### 檢測結果 Test Result(s)

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

# 檢測報告

## Test Report

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測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL
<b>多溴聯苯 Polybrominated Biphenyls(PBBs)</b>		
一溴聯苯 Monobromodiphenyl	N.D.	5mg/kg
二溴聯苯 Dibromobiphenyl	N.D.	5mg/kg
三溴聯苯 Tribromobiphenyl	N.D.	5mg/kg
四溴聯苯 Tetrabromobiphenyl	N.D.	5mg/kg
五溴聯苯 Pentabromobiphenyl	N.D.	5mg/kg
六溴聯苯 Hexabromobiphenyl	N.D.	5mg/kg
七溴聯苯 Heptabromobiphenyl	N.D.	5mg/kg
八溴聯苯 Octabromobiphenyl	N.D.	5mg/kg
九溴聯苯 Nonabromobiphenyl	N.D.	5mg/kg
十溴聯苯 Decabromobiphenyl	N.D.	5mg/kg

測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL
<b>多溴二苯醚 Polybrominated Diphenyl Ethers(PBDEs)</b>		
一溴二苯醚 Monobromodiphenyl ether	N.D.	5mg/kg
二溴二苯醚 Dibromobiphenyl ether	N.D.	5mg/kg
三溴二苯醚 Tribromobiphenyl ether	N.D.	5mg/kg
四溴二苯醚 Tetrabromobiphenyl ether	N.D.	5mg/kg
五溴二苯醚 Pentabromobiphenyl ether	N.D.	5mg/kg
六溴二苯醚 Hexabromobiphenyl ether	N.D.	5mg/kg
七溴二苯醚 Heptabromobiphenyl ether	N.D.	5mg/kg
八溴二苯醚 Octabromobiphenyl ether	N.D.	5mg/kg
九溴二苯醚 Nonabromobiphenyl ether	N.D.	5mg/kg
十溴二苯醚 Decabromobiphenyl ether	N.D.	5mg/kg

測試樣品/部位描述 無色透明熱縮套管

**Tested Sample/Part Description** Colorless transparent heat-shrinkable tube

**備註:** 對於檢測鉛, 鎘, 汞之樣品已完全溶解。

-N.D. = 未檢出 (小於方法檢出限)

-mg/kg = ppm = 百萬分之一

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

-MDL = Method Detection Limit

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

-mg/kg = ppm = parts per million

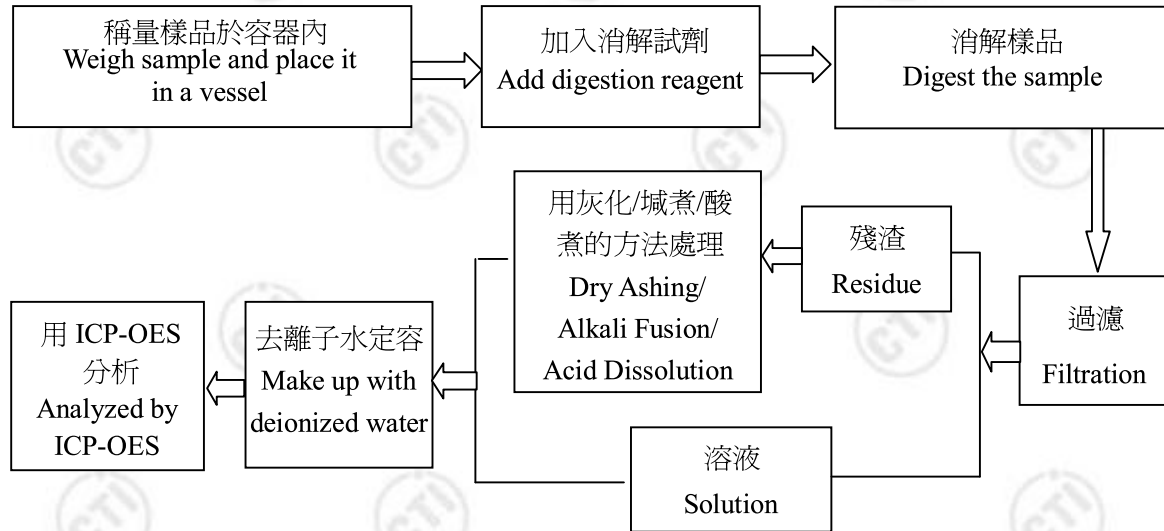
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Report No. ECL01J081203002E

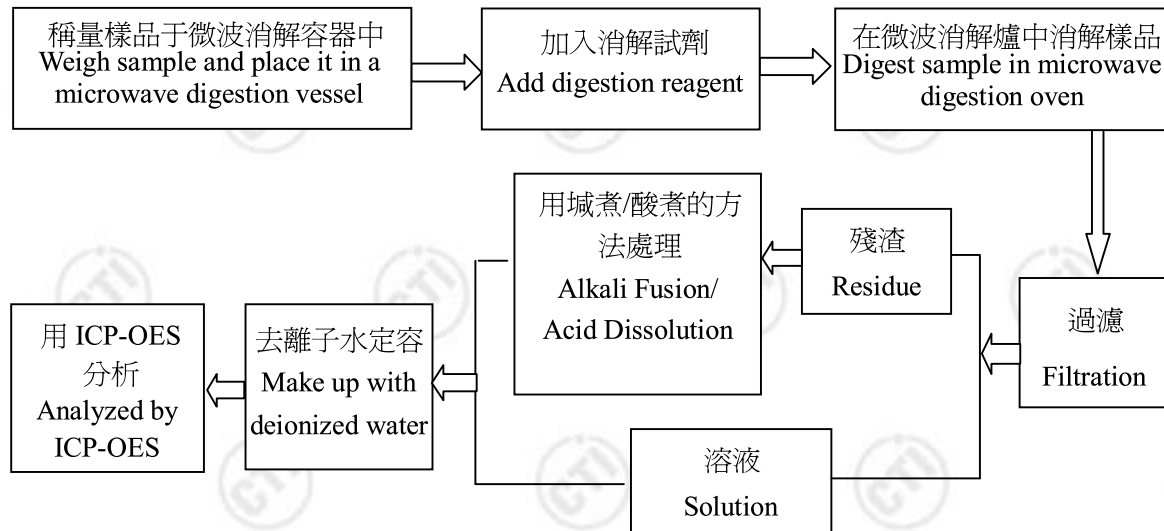
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## 檢測流程 Test Process

### 1. 鉛(Pb), 鎘(Cd), 鉻(Cr) Lead(Pb), Cadmium(Cd), Chromium(Cr)



### 2. 汞(Hg) Mercury (Hg)

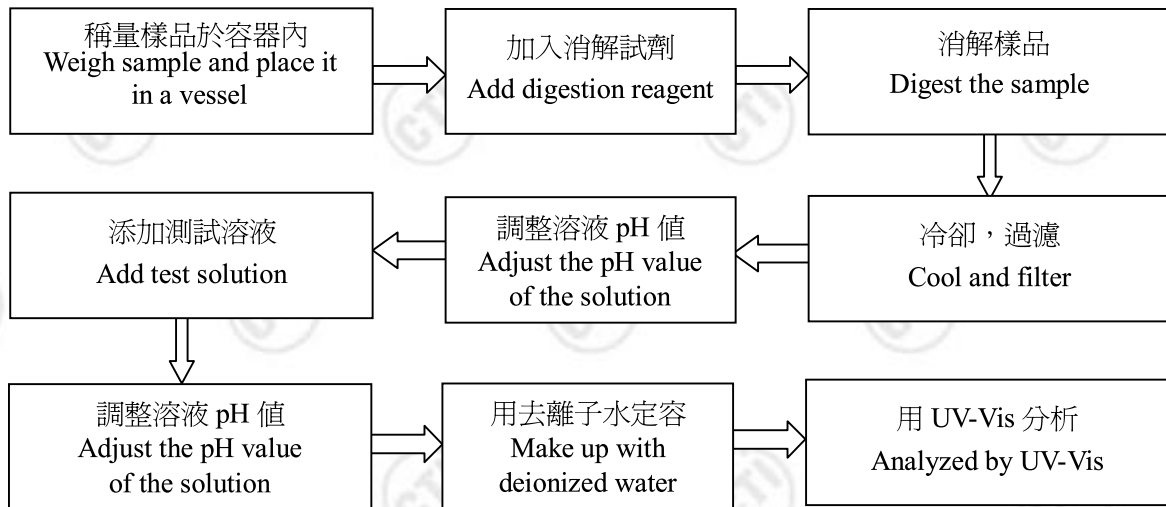


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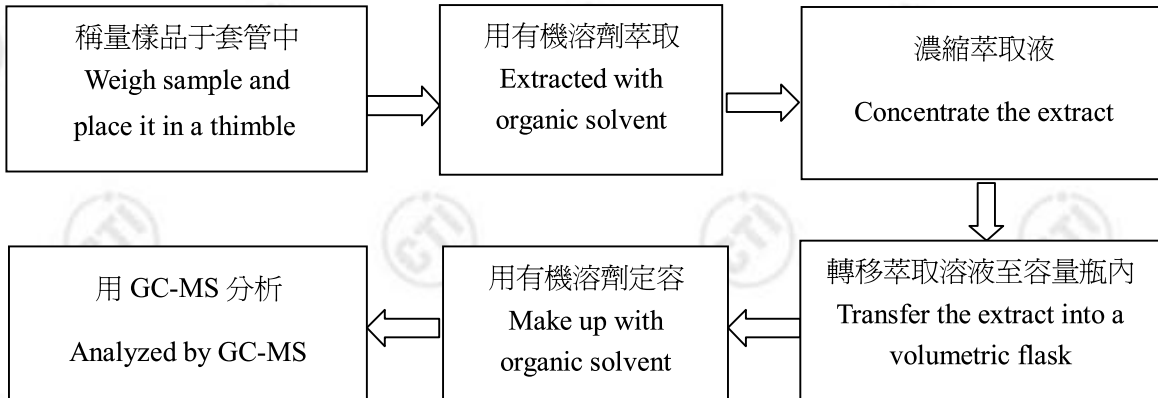
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### 3. 六價鉻(Cr(VI)) Hexavalent Chromium (Cr(VI))



### 4. 多溴聯苯(PBBs)，多溴二苯醚(PBDEs)

#### Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)

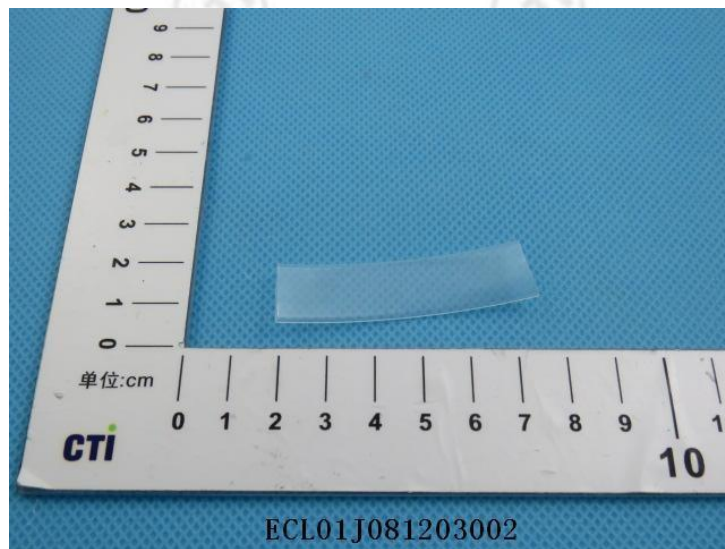


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## 樣品圖片 Photo(s) of the sample(s)



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\*\*\*End of report \*\*\*

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