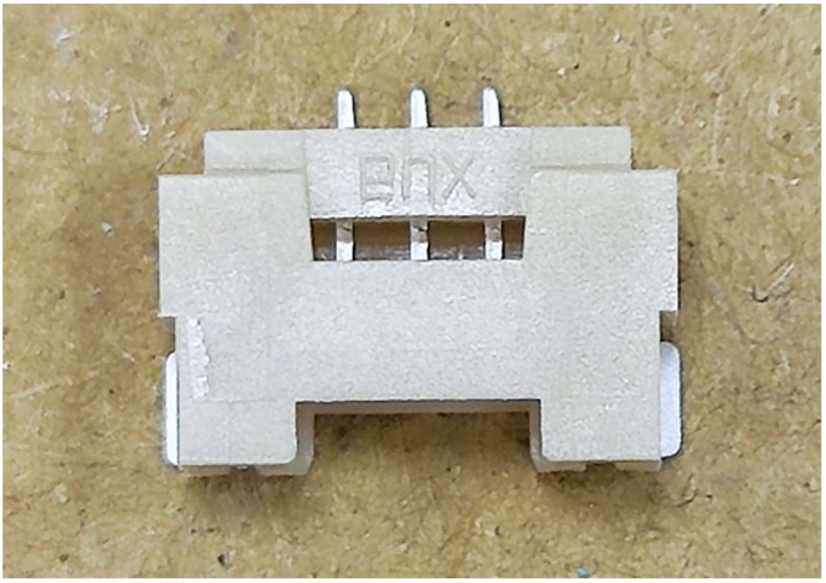
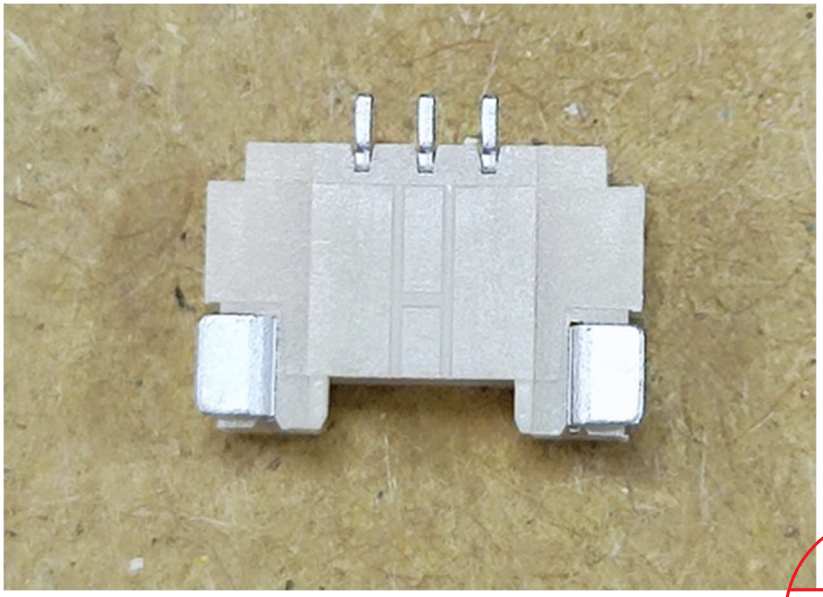
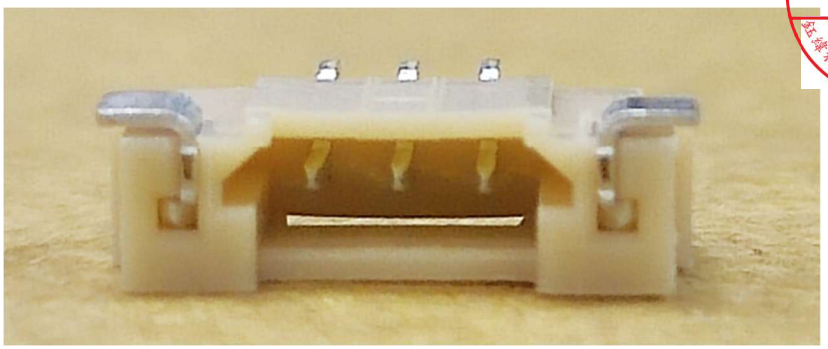
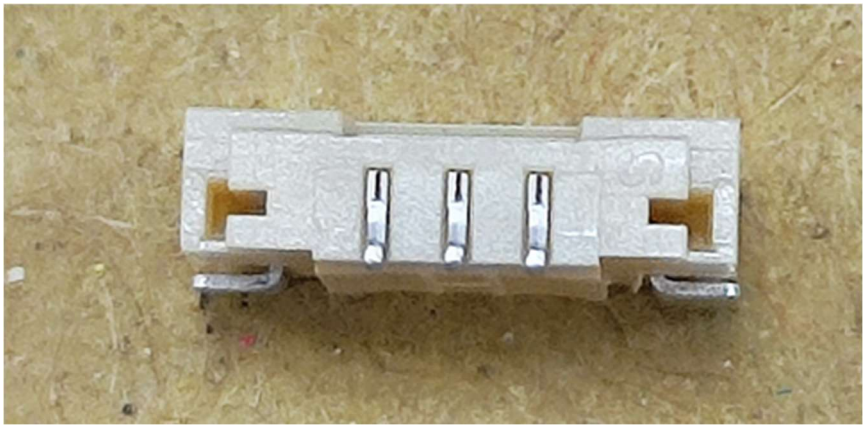






設計驗證
工程課
2025 -09- 30
發行
宏緯科技開發股份有限公司





Xya 新亚 Electric Communication

SPECIFICATION FOR APPROVAL

承認書

Customer Name	DIVA
XINYA P/N	S1315-03RWA-S03-KQDH
Customer P/N	3FM00318310(F0330)
Designed by	刘帅
Checked by	李政达
Approved by	金卫星
DATE	2025.09.15

SUZHOU XINYA ELECTRIC COMMUNICATION CO., LTD. 苏州新亚电通股份有限公司 3205000117784

CUSTOMER SIGNATURE		
Prepared By	Checked By	Approved By
		設計驗證 工程課 2025 -09- 30 發行 蘇鎮科技開發股份有限公司

PLEASE RETURN TO US ONE COPY OF SPECIFICATION FOR APPROVAL WITH YOUR APPROVED SIGNATURES.

苏州新亚电通股份有限公司

SUZHOU XINYA ELECTRIC COMMUNICATION CO., LTD.

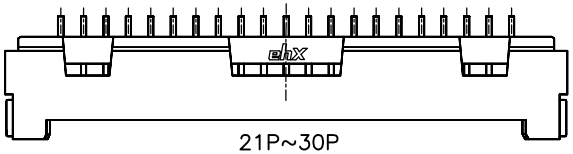
COMPONENT SPEC VERSION RECORD

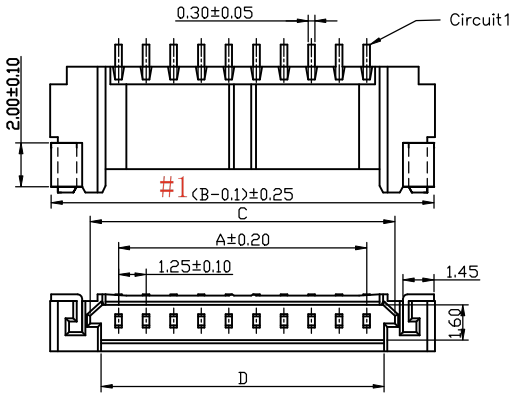
CUSTOMER PART NO.	3FM00318310	XINYA PART NO.	S1315-03RWA-S03-KQDH

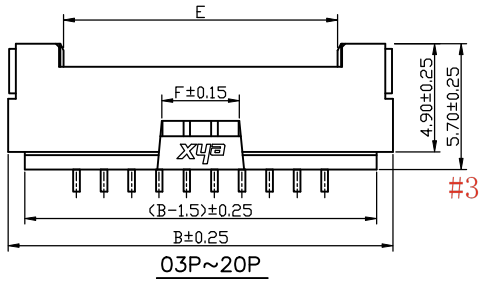
VER	MINUTE OF CHANGES	XINYA CHECK	RELEASE DATE
A	CHECKED AND RELEASED	金卫星	Sep-15-25

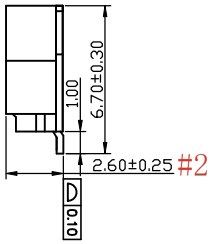
成品规格图号DRAWING NO. S1315084S

No. of Contacts	DIMENSIONS					
	A	B	C	D	E	F
2	1.25	7.45	3.81	2.83	2.43	3.50
3	2.50	8.70	5.06	4.08	3.68	3.50
4	3.75	9.95	6.31	5.33	4.93	3.50
5	5.00	11.20	7.56	6.58	6.18	3.50
6	6.25	12.45	8.81	7.83	7.43	3.50
7	7.50	13.70	10.06	9.08	8.68	3.50
8	8.75	14.95	11.31	10.33	9.93	3.50
9	10.00	16.20	12.56	11.58	11.18	3.50
10	11.25	17.45	13.81	12.83	12.43	3.50
11	12.50	18.70	15.06	14.08	13.68	5.00
12	13.75	19.95	16.31	15.33	14.93	5.00
13	15.00	21.20	17.56	16.58	16.18	5.00
14	16.25	22.45	18.81	17.83	17.43	5.00
15	17.50	23.70	20.06	19.08	18.68	5.00
20	23.75	29.95	26.31	25.33	24.93	5.00
25	30.00	36.20	32.56	31.58	31.18	6.00
30	36.25	42.45	38.81	37.83	37.43	6.00

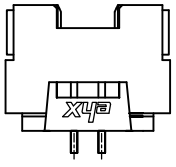


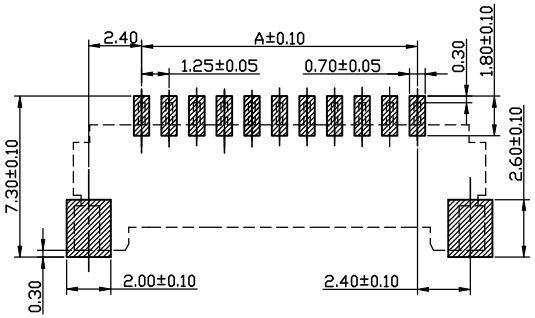












版本 REV.	日 期 DATE	ECN NO.	变更内容 DESCRIPTION	制图 DRAWN

Ordering Code:

S1315 – XX R XX – S X 3 – K QD X
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series NO.

② Circuits Number

③ R: Right Angle

④ Plating Code:

Definition	Code
◎ Tin plated:	VA
◎MAtte Tin plated	WA
◎ Gold plated:	
flash B 15u"	F
10u" E 30u"	J
◎Duplex plating:	
flash K 15	P
10u" N 30u"	U
◎Standard:B Prefix "V" "W" Means Lead Free Plating	

⑤ Housing Color:
0: Color Is Nature
B: Color Is Black

⑥ Packing:
Null: Tube
K: Tape&Reel
C: Film+Tape&Reel

⑦ Customer Code

⑧ NONE: Halogen Part
H: Halogen Free Part

NOTES: (UNLESS OTHERWISE SPECIFIED)
1.Temperature Range: −25°C~+85°C
2.Voltage Rating: 150V,AC,DC
3.Current Rating: 1A
4.Contact Resistance: 20mΩ Max.
5.Insulation Resistance: 500MΩ Min.
6.Withstand Voltage: 500V,AC/Minute.
7.Material:
Housing: High Temperature Thermoplastic ,UL 94V−0. Color See Drawing
Contact: Copper Alloy, Gold Or Tin Plated
Clip: Copper Alloy, Gold Or Tin Plated

設計驗證 工程課 2025-09-30 發行 苏州新亚电通股份有限公司

3FM00318310(F0330)

GENERL TOLERANCE		制 图 (DR.)		料 号 PART NO.	S1315-XXRXX-SX3-KQDX	版 本 REV.	A
X.±0.30	X.°±2°	审 核 (CHK.)		品 名 TITLE	1.25P SMD WAFER	页 次 SHEET	1/1
.X±0.25	.X°±1°	核 准 (APPD.)		客户料号 CUTM.NO.			
.XX±0.20	.XX°±0.5°	第1版 (OR.D.)	2012.06.16	Xya 苏州新亚电通股份有限公司 SUZHOU XINYA ELECTRIC COMMUNICATION Co.,LTD.			
.XXX±0.15	.XXX°±0.5°	单 位 UNITS	MM 比 例 SCALE 1:1				

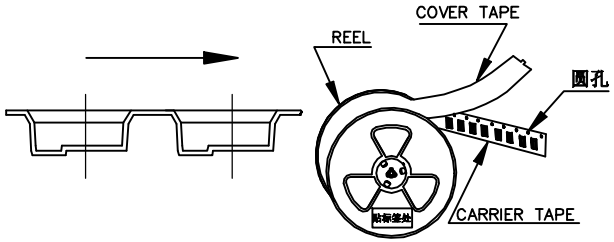
苏州新亚电通股份有限公司 包装作业规范

文件编号	MP1848	适用产品	S1315-02~14RXX-SX3-KH	页次	1/1	版别	A

包装作业图示及说明 (PACKING OPERATION DIAGRAM & INSTRUCTION)

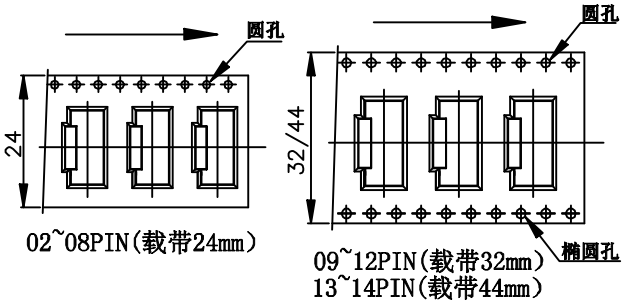
一

1) 将成品放入CARRIER TAPE槽内,排列方式如图。成品摆放方式如图:
2) 如右图所示：载带圆孔在前，载带出口在右侧顺时针方向，标签贴在正面REEL盘上。



二

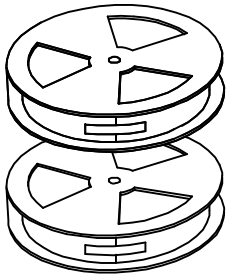
1) REEL盘上贴新亚标签。



02~08PIN(载带24mm)
09~12PIN(载带32mm)
13~14PIN(载带44mm)

三

1) 如图所示包装,TAPE REEL先放入防水袋中并封好，连续未装满的REEL装入零数箱，以胶带封箱。
2) 一盘REEL可以包装1400PCS成品
3) 02~08PIN一箱装8盘,09~12PIN一箱装7盘,13~14PIN一箱装5个REEL盘.
4) 外箱贴新亚标签



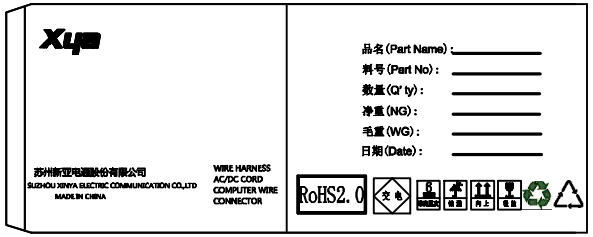


四 包装材料:

1. CARRIER TAPE: CAXXX
2. COVER TAPE : CAH24/32/44
3. PLASTIC REEL :CAR24/32/44
4. 外箱 **CT026 (350*350*300)**
5. 防水袋 **CE105**

备 注 (REMARK)

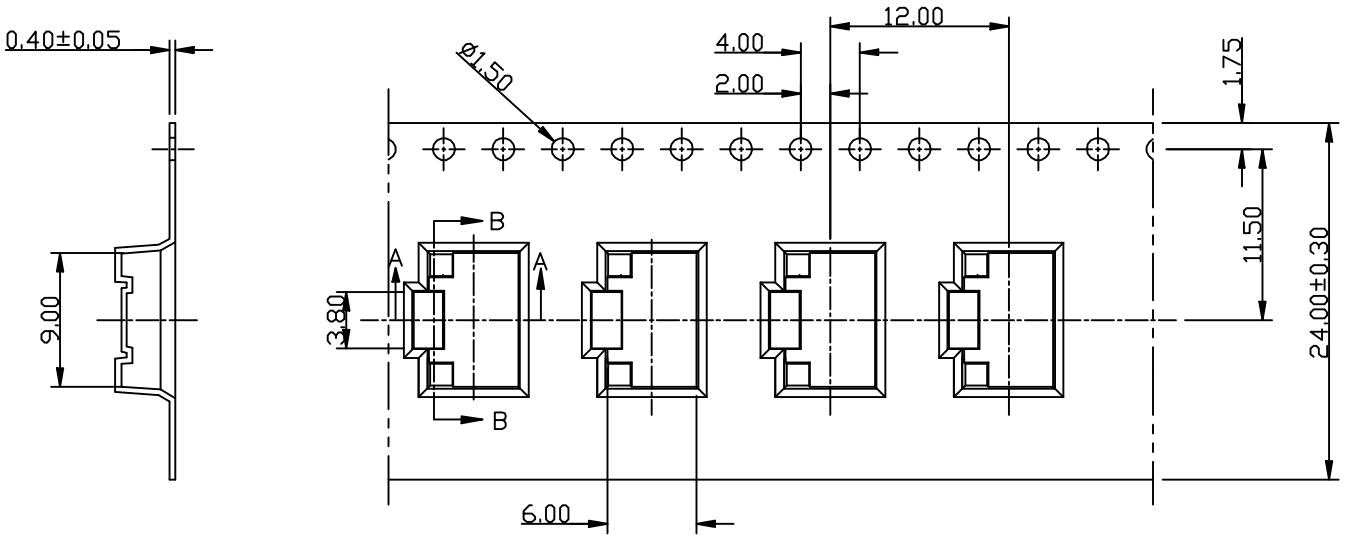
1. 若有未装满之零数箱，必须以缓冲材料塞满.
2. 包装中如有CARRIER断带则以零数卷包装.
3. 对于单个零数卷包装的产品，以最小包装方式出货，如多个零数卷产品，可以合理的放置在一个纸箱内出货，纸箱外作标示。



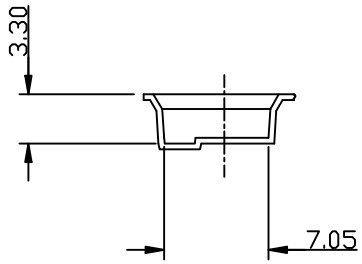
核 定		审 核		制 定	

版本 REV.	日期 DATE	DCN NO.	变更内容 DESCRIPTION	制图 DRAWN

包材检验图号DRAWING NO.
CA041P



SECTION B-B



SECTION A-A

Note:
1. 搭配成品为：S1315-03RXX-S03-KH
2. 一小卷可装1400PCS
3. PS材质

ROHS

GENERL TOLERANCE		制图 (DR.)		料号 PART NO.	CA041	版本 REV.	B
X.±0.35	X.°±2°	审核 (CHK.)		品名 TITLE	载带	页次 SHEET	1/1
.X±0.30	.X°±1°	核准 (APPD.)		客户料号 CUTM.NO.			
.XX±0.25	.XX°±0.5°	第1版 (OR.D.)	2008.12.12	Xinya Electronic	苏州新亚电通有限公司		
.XXX±0.05	.XXX°±0.5°	单位 UNITS	MM 比例 SCALE 1:1	SUZHOU XINYA ELECTRONIC COMMUNICATION Co. LTD.			

PRODUCTION NAME：S1315-XX

1. SCOPE 应用范围

This product specification contains the test method, the general performance and requirement for 1.25mm pitch connector system.

2. REQUIREMENTS 必要条件

2.1. DESIGN AND CONSTRUCTION 设计规范

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

2.2. MATERIALS 材质

A. Housing：High Temperature Plastic, UL 94V-0.Nature

B Contact：Copper Alloy.

2.3. RATINGS 规格

A. Current Rating：1A

B. Voltage Rating：150V AC/DC

C. Operating temperature:：-25℃~ +85℃

2.4. LEAD FREE 无铅要求

A. Cd、 Pb、 Hg、 Cr^{6+}、 PBDE、 PBB…Heavy Metals Content
Refer to ROHS.

1. TEST CONDITION 测试条件

3.1. The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1.

3.2 TEST REQUIREMENTS AND PROCEDURES SUMMARY

测试规格及测试条件

Items 测试项目	**Test conditions** 测试条件	**Criteria** 判定标准
ELECTRICAL 电气特性		
Contact Resistance 接触阻抗	EIA-364-06B. Measure the electrical resistance across a pair of mated connector contacts.	20 mΩ max Initial 40 mΩ max Final
Insulation Resistance 绝缘阻抗	EIA-364-21C. Mate connectors and apply a voltage of 500V DC for 2 minutes between adjacent terminals and terminals on opposite sides.	500 MΩ min Initial 250 MΩ min Final
Dielectric Withstanding Voltage 耐电压	EIA-364-20B. Method B. Apply 500V AC for 1 minute between adjacent terminals and terminals on opposite sides of connectors	No evidence of break-down and flashover Leakage current must be less than 0.5mA
MECHANICAL 机械特性		
Insertion Force 插入力	Plug insert into socket shall be an alignment at a constant speed of 25mm/minute.	0.375kgf max per contact
Withdrawal Force 拔出力	Plug pull out socket shall be an alignment at a constant speed of 25mm/minute.	0.05kgf min per contact
Contact Retention Force 保持力	Pull contact at rate of 25mm/minute from housing	0.2kgf min per contact
Durability 耐久性	EIA-364-09A. The sample should be mounted in the tester and fully mated and unmated 30 cycles specified at the rate of 5 cycles/min	See Note Contact Resistance: 40 mΩ max Final
ENVIRONMENTAL 环境测试		
Vibration 振动测试	Vibration frequency range:10-55-10 Hz / min. Amplitude: 1.52mm Period: 2 hours for each direction X, Y, Z-axis.(2 hours in total)	No damage Discontinuity: 1 microsecond max.
Humidity 恒温恒湿	EIA-364-31B, Method II, Condition A. Temperature：40 ±2℃ Humidity：90 ~ 95 % (RH) Period：96 hours(measurement shall be made within 1 h after that. Water drops shall be removed.)	See Note Contact Resistance: 40 mΩ max Final
Thermal Shock 冷热冲击	EIA-364-32B, Condition I. One cycle consists of: -55℃ for 30 minutes. +85℃ for 30 minutes. Times of cycle：5 cycles.	See Note Contact Resistance: 40 mΩ max Final

Salt Spray 盐雾试验	EIA-364-26A, Temperature：35 +1/-2℃ Salt solution：5 ±1%(solids by mass) Duration：24 ±1h (After the test, salt deposit shall be removed in running water.)	Appearance: No damage. Contact Resistance: 40 mΩ max Final
High Temperature 高温试验	Expose a pair of mated connectors to 85+/-2℃ for 96 hours.	See Note Contact Resistance: 40 mΩ max Final
Low Temperature 低温试验	Expose a pair of mated connectors to -25+/-2℃ for 96 hours.	See Note Contact Resistance: 40 mΩ max Final
Solderability 沾锡性	EIA-364-52 Soldering temperature：245 ±5℃ Immersing time：4~5sec	More than 95% of immersed part shall be covered with solder.
Resistance to soldering heat 耐焊接热	Lead - Free process Soldering temperature：260±5℃ Immersing time：10±0.5sec	No damage

Figure 1

NOTE：Shall meet visual requirements, show no physical damages.

3.3. PRODUCT QUALIFICATION AND REQUALIFICATION TEST

SEQUENCE 测试群组与顺序

Test or Examination 测试或检查项目	Test Group 测试群组								
	A	B	C	D	E	F	G	H	I
	Test Sequence (a) 测试顺序								
Examination of Product 尺寸量测	1	1	1,5	1,5	1,9	1,9	1,5	1,5	1,3
Contact Resistance 接触阻抗			2,4	2,4	2,8	2,8	2,4	2,4	
Insulation Resistance 绝缘阻抗					3,7	3,7			
Dielectric Withstanding Resistance 耐电压					4,6	4,6			
Contact Retention Force 保持力	2								
Insertion Force 插入力		2							
Withdrawal Force 拔出力		3							
Durability 耐久性			3						
Vibration 振动测试				3					
Humidity 恒温恒湿					5				
Thermal Shock 冷热冲击						5			
Salt Spray 盐雾试验							3		
Temperature Life 老化试验								3	
Solder ability 沾锡性									2

Figure 2

NOTE：Numbers indicate sequence in which tests are performed

4. Storage: 贮存

(1) TEMPERATURE: -40°C~+90°C,Relative humidity : <=80%; Not to storange in corrosive environments

包装完毕的连接器应在环境温度为-40°C~+90°C，相对湿度不大于80%，周围空气中没有酸性，碱性及其它腐蚀性气体的库房中贮存。

(2)Re-qualification test shall be conducted immediately while the storage duration exceed 6 months

贮存期为 6 个月，超过 6 个月需重新检查。

苏州新亚电通股份有限公司

SUZHOU XINYA ELECTRONIC COMMUNICATION CO., LTD.

信 赖 性 测 试 报 告

一、接触电阻试验：

1.1 试验的目的：验证连接器端子接触电阻是否符合规格要求

1.2 试验的条件：使用微欧姆表对产品进行量测

1.3 判定标准：20mΩ Max

1.4 试验结果(未插拔测试前之接触电阻)：PASS

次　数	1	2	3	4	5	6	7	8	9	10	N=10
试验结果(mΩ)	6.2	7.3	7.5	6.3	5.7	6.8	6.4	6.9	7.3	5.6	

二、绝缘阻抗试验：

2.1 试验的目的：验证连接器端子之绝缘阻抗是否符合规格要求

2.2 试验的条件：使用绝缘耐压仪

2.2.1 试验电压：500V DC

2.2.2 加压时间：60Sec

2.3 判定标准：500MΩ Min

2.4 试验结果：PASS

次　数	1	2	3	4	5	6	7	8	9	10	N=10
试验结果(MΩ)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	

三、耐电压试验：

3.1 试验的目的：验证连接器端子之耐压是否符合规格要求

3.2 试验的条件：使用绝缘耐压仪

3.2.1 试验电压：500V AC

3.2.2 加压时间：60Sec

3.3 判定标准：无击穿，未闪烁

3.4 试验结果：PASS

次　数	1	2	3	4	5	6	7	8	9	10	N=10
试验结果	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	

四、机械性能测试：

4.1 接触保持力测试：

4.1.1 规格要求：0.2kgf Min per contact

4.1.2 测试方法：将配合的单 Pin 插入 Wafer 后，再以速度 25mm/minute 拔出

4.1.3 测试结果：PASS

Unit: kgf

次　数	1	2	3	4	5	6	7	8	9	10	N=10
试验结果	0.63	0.61	0.58	0.47	0.51	0.53	0.66	0.61	0.59	0.58	

信 赖 性 测 试 报 告

4.2 插入力测试:

4.2.1 规格要求：03Pin：1.125kgf Max whole

4.2.2 测试方法：将整体插入 Wafer，测试速度：25mm/minute

4.2.3 测试结果：PASS

Unit: kgf

次 数	1	2	3	4	5	6	7	8	9	10
试验结果	0.276	0.262	0.267	0.317	0.253	0.237	0.246	0.296	0.285	0.289

N=10

4.3 拔出力测试:

4.3.1 规格要求：03Pin：0.15kgf Min whole

4.3.2 测试方法：将整体从 Wafer 中拔出，测试速度：25mm/minute

4.3.3 测试结果：PASS

Unit: kgf

次 数	1	2	3	4	5	6	7	8	9	10
试验结果	0.237	0.216	0.233	0.198	0.254	0.261	0.214	0.225	0.225	0.267

N=10

五、耐久性：

5.1 测试方法：使用插拔力测试机以 25mm/minute 的速度连续插拔 30 次。

5.2 判定标准：导通阻抗 40mΩMax。

5.3 测试结果：PASS

N=10

Test item	Initial(mΩ)			After test(mΩ)		
接触电阻	Max	Min	Ave	Max	Min	Ave
	9.74	8.66	9.43	11.42	9.76	10.74

六、可焊性试验：

6.1 条件：焊锡温度：245±5℃
沾锡时间：4~5seconds

6.2 判定标准：沾锡面积 95%以上，且沾锡面须光泽饱满，无起泡，无针孔，无剥落等异常

6.3 试验结果： PASS

七、盐雾试验：

7.1 条件：盐水浓度：5±1% 、试验温度：35±2℃
试验时间：24H

7.2 试验方法：将测试之产品以 30° ～60° 的倾斜角度放置在盐雾测试机内

信 赖 性 测 试 报 告

7.3 判定标准：

7.3.1 产品接触及焊脚区域无漏铜的氧化现象

7.3.2 导通阻抗 40mΩ Max

7.4 试验结果： PASS

Test item	Initial(mΩ)			After test(mΩ)			N=10
接触电阻	Max	Min	Ave	Max	Min	Ave	
	9.54	7.47	8.63	10.14	8.64	9.23	

八、恒温恒湿试验：

8.1 条件：温度：40±2℃、湿度：(90～95)%、试验时间 96H，
取出室温 1h 后用清水清洗

8.2 判定标准：导通阻抗 40mΩ Max/绝缘电阻 250MΩ min
/耐电压 250VAC 无击穿，未闪烁

8.3 试验结果：PASS

Test item	Initial(mΩ)			After test(mΩ)			N=10
接触电阻	Max	Min	Ave	Max	Min	Ave	
	9.67	7.32	8.73	11.74	9.61	10.55	

Test item	HSG-TER(MΩ)		TER-TER(MΩ)		N=10
绝缘电阻	initial	After test	initial	After test	
	PASS	PASS	PASS	PASS	

Test item	HSG-TER(MΩ)		TER-TER(MΩ)		N=10
耐压测试	initial	After test	initial	After test	
	Good	Good	Good	Good	

九、冷热冲击试验：

9.1 条件：在-25+/-3℃的恒温箱中放置 30MIN，再以 10～20℃/min 将温度
升至 85+/-3℃ 30MIN,如此 5 个循环，取出在室温下 1h 后检验

9.2 判定标准：导通阻抗 40mΩ Max/绝缘电阻 250MΩ min
/耐电压 250VAC 无击穿，未闪烁

9.3 试验结果：PASS

Test item	Initial(mΩ)			After test(mΩ)			N=10
接触电阻	Max	Min	Ave	Max	Min	Ave	
	9.67	7.44	8.73	12.64	11.23	11.67	

Test item	HSG-TER(MΩ)	TER-TER(MΩ)	N=10

信 赖 性 测 试 报 告

绝缘电阻	initial	After test	initial	After test
	PASS	PASS	PASS	PASS

N=10

Test item	HSG-TER(MΩ)		TER-TER(MΩ)	
耐压测试	initial	After test	initial	After test
	Good	Good	Good	Good

十、高温试验：

10.1 条件：温度 85±2℃，测试时间 96h
10.2 判定标准：导通阻抗 40mΩ Max
10.3 试验结果：PASS

N=10

Test item	Initial(mΩ)			After test(mΩ)		
接触电阻	Max	Min	Ave	Max	Min	Ave
	12.32	10.43	11.12	13.53	11.41	12.65

十一、低温试验：

10.1 条件：温度-25±2℃，测试时间 96h
10.2 判定标准：导通阻抗 40mΩ Max
10.3 试验结果：PASS

N=10

Test item	Initial(mΩ)			After test(mΩ)		
接触电阻	Max	Min	Ave	Max	Min	Ave
	10.53	9.73	10.16	13.74	11.23	12.12

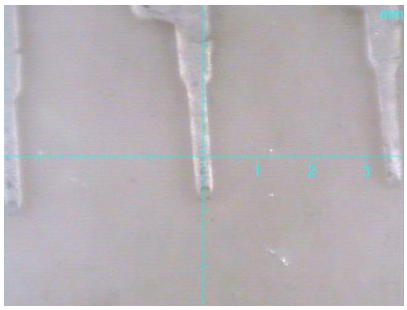
十二、耐焊接热试验：

11.1 条件：温度 260±5℃，测试时间 10±0.5sec
11.2 判定标准：无破裂、无变形
11.3 试验结果：PASS

核 准：金卫星　　审 核：李政达　　制 定：刘帅

苏州新亚电通股份有限公司
镀层测试报告

P/N: S1315 端子
来料批次：
标准要求：Sn 100u”min；Ni 30u”min
Fischerscope XRAY XULM
Product: 5 / Sn/Ni/CuSn Dir.: Fischer Block: 1313
Application: 5 / Sn/Ni/CuSn



n=	1	Sn 1 =	124.7 µ"	Ni 2 =	59.83 µ"
n=	2	Sn 1 =	127.3 µ"	Ni 2 =	53.95 µ"
n=	3	Sn 1 =	125.2 µ"	Ni 2 =	59.66 µ"
n=	4	Sn 1 =	130.9 µ"	Ni 2 =	53.00 µ"
n=	5	Sn 1 =	126.5 µ"	Ni 2 =	57.47 µ"
n=	6	Sn 1 =	131.9 µ"	Ni 2 =	51.66 µ"
n=	7	Sn 1 =	126.4 µ"	Ni 2 =	56.09 µ"
n=	8	Sn 1 =	131.0 µ"	Ni 2 =	52.08 µ"
n=	9	Sn 1 =	129.2 µ"	Ni 2 =	51.36 µ"
n=	10	Sn 1 =	131.4 µ"	Ni 2 =	57.40 µ"

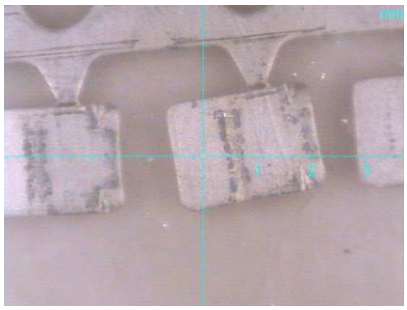
Mean	**128.5 µ"**	**55.25 µ"**
Standard deviation	**2.736 µ"**	**2.354 µ"**
C.O.V. (%)	**2.13**	**4.84**
Range	**7.142 µ"**	**7.710 µ"**
Number of readings	**10**	**10**
Min. reading	**124.7 µ"**	**51.36 µ"**
Max. reading	**131.9 µ"**	**59.83 µ"**
Measuring time	15 sec	

Operator: 齐晓丽 Audit:张加燕
Date: 2025-7-21 Time: 18:40:55

判定：合格

苏州新亚电通股份有限公司
镀层测试报告

P/N: S1315 接地片
来料批次：
标准要求：Sn 100u”min；Ni 30u”min
Fischerscope XRAY XULM
Product: 6 / Sn/Ni/CuZn Dir.: Fischer Block: 8237
Application: 6 / Sn/Ni/CuZn



n=	1	Sn 1 =	151.1 µ"	Ni 2 =	51.4 µ"
n=	2	Sn 1 =	147.8 µ"	Ni 2 =	52.2 µ"
n=	3	Sn 1 =	149.9 µ"	Ni 2 =	52.4 µ"
n=	4	Sn 1 =	142.3 µ"	Ni 2 =	58.1 µ"
n=	5	Sn 1 =	146.3 µ"	Ni 2 =	51.6 µ"
n=	6	Sn 1 =	150.9 µ"	Ni 2 =	50.5 µ"
n=	7	Sn 1 =	147.1 µ"	Ni 2 =	50.3 µ"
n=	8	Sn 1 =	150.3 µ"	Ni 2 =	52.4 µ"
n=	9	Sn 1 =	151.4 µ"	Ni 2 =	51.4 µ"
n=	10	Sn 1 =	153.5 µ"	Ni 2 =	51.4 µ"

Mean	**149.1 µ"**	**52.2 µ"**
Standard deviation	**3.221 µ"**	**1.317 µ"**
C.O.V. (%)	**2.16**	**3.20**
Range	**11.2 µ"**	**4.38 µ"**
Number of readings	**10**	**10**
Min. reading	**142.3 µ"**	**50.3 µ"**
Max. reading	**153.5 µ"**	**58.1 µ"**
Measuring time	**15** sec	

Operator:齐晓丽 Audit:张加燕
Date: 2025-7-21 Time: 18:46:44

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The information presented on the UL Prospector datasheet was acquired by UL Prospector from the producer of the material. UL Prospector makes substantial efforts to assure the accuracy of this data. However, UL Prospector assumes no responsibility for the data values and strongly encourages that upon final material selection, data points are validated with the material supplier.

[guide info] Component - Plastics **E90350**

KURARAY CO LTD

GENESTAR DIV, OTE CENTER BLDG 1-1-3, OTEMACHI, CHIYODA-KU TOKYO 100-8115 JP

GP2450NH(rr)

Polyamide 9T (PA9T) "Genestar", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	0.150	V-0	-	-	-	-	-
	0.40-0.44	V-0	3	3	140	90	130
	1.5	-	-	-	140	90	130
	3.0	-	-	-	140	100	140

Comparative Tracking Index (CTI): 0

Dielectric Strength (kV/mm): -

High-Voltage Arc Tracking Rate (HVTR): 0

Dimensional Stability (%): -

Inclined Plane Tracking (IPT): -

Volume Resistivity (10^X ohm-cm): -

High Volt, Low Current Arc Resis (D495): 4

(rr) - Virgin and regrind up to 50% by weight have the same basic material characteristics.

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date: 2009-10-28

Last Revised: 2016-12-18

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IEC and ISO Test Methods

Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.150	V-0 (ALL)
			0.40-0.44	V-0 (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	-	-
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	-	-
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	C	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m^2	-	-
ISO Izod Impact	ISO 180	kJ/m^2	-	-
ISO Charpy Impact	ISO 179-2	kJ/m^2	-	-

	Unit	Test method	Genestar			Other products for reference (Non-halogen grade)				
Grade		(ASTM)	GW1458HF	GW2458HF	GP2450NH	PA6T	PA6T	PA4T	PA10T	PA10T
			Non-halo (HB)	Halogen (V-0)	Non-halo (V-0)	Zytel HTN-FR52G30 NH	Arlen RA230N	NC1101A	Vicnyl-R630	Grivory-XE4027
						Dupont	Mitsui	DSM	Kingfa	EMS
Glass fiber content	%	–	45	45	45	30	30	30	30	30
Physical properties										
Specific gravity	g/cm3	–	1.50	1.73	1.53	1.44	1.60	1.45	1.61	1.41
Water absorption (105F.40c/95%RH/168hrs)	%	–	1.1	0.8	1.0	3.5	—	—	1.6	1.5
Flammability	–	UL94	HB	V-0	V-0	V-0	V-0	V-0	V-0	V-0
Mechanical properties										
Tensile strength	MPa	D638	150	165	151	145	165	170	155	115
Tensile elongation	%	D638	3.1	3.5	3.0	2.0	4.0	2.1	2.5	2.0
Flexural strength	MPa	D790	207	225	203	238	240	—	230	—
Flexural modulus	GPa	D790	13	15	12.5	—	11.4	12	10.5	10
Izod impact strength (notched)	J/m	D256	130	125	90	—	88	—	95	—
Charpy Impact Strength (notched)	kJ/m2	ISO178/1eA	—	—	—	8	—	11	—	6
Thermal properties										
Melting point	F/C	–	583/306	583/306	583/306	590/310	608/320	608/320	563/295	563/295
Glass transition	F/C	–	257/125	257/125	257/125	—	203/95	—	—	—
DTUL (1.82MPa)	F/C	D648	554/290	545/285	545/285	545/285	581/305	—	527/275	509/265
Dimensional properties	* not registered									
Molding shrinkage : MD/TD	%	–	0.05/0.5	0.03/0.4	0.04/0.5	0.3/1.0	0.3/0.7	—	0.3/0.9	0.3/1.0
(Thickness)		–	(1mmt)	(1mmt)	(1mmt)	(2mmt)	(2mmt)	—	(2mmt)	(2mmt)

<Reference : Catalog data>

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Genestar GP2450 NH

Product code :

General Use : Material for molding

Company & Manufacture

Name : Kuraray Co., Ltd.
Section: Genestar Division, Chemicals and Medical Products Company
Address: 1-1-3, Otemachi, Chiyoda-ku, Tokyo, 100-8115, JAPAN
Telephone number: +81-3-6701-1677
Fax number: +81-3-6701-1580
E-mail address: msds_qm-ps@kuraray.co.jp

Emergency Telephone number: +81-3-6701-1677

2. HAZARDS IDENTIFICATION

Most important hazard

Human health effect: No relevant information found

Environmental effect: No relevant information found

Physical and chemical hazards : No relevant information found

Main Symptoms: No relevant information found

Classification: No relevant information found

Emergency overview:

Not dangerous substances （Regulation (EC) 1272/2008 ）

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance / Preparation: Preparation

Chemical name or generic name; Concentration or concentration range; CAS number; TSCA; EINECS / ELINCS:

Chemical name or generic name,	Concentration range	CAS number	TSCA	EINECS / ELINCS
Polycondensate of 2-methyloctane-1,8-diamine, nonane-1,9- diamine and terephthalic acid (insoluble in water, acid and alkali also containing 1% or less of component having less than 1,000 of molecular weight)	45±3%	169284-22-4,	listed. (CBI)	listed (CBI)
Glass, oxide, chemicals	45±3%	65997-17-3	listed.	266-046-0
Additives	＜11%	listed	listed. (CBI)	listed (CBI)

Components contributing to hazard or **Impurities contributing to the hazard**

Not dangerous substances

Classification and hazard labeling:

Non-correspondence

4. FIRST-AID MEASURES

Information

Inhalation:

When a gas generated from the molten material has been inhaled, remove fresh air without delay and wait until the victim is recovered.

If symptoms persist, call a physician.

Skin contact:

Cool the contacted skin with clean water without delay, when the skin has been contacted with the material in a molten form.

Don't peel off the polymer from the skin forcibly.

Get medical attention when the unpleasantness remains.

Eye contact:

Cool and rinse the eye with clean water for at least 15 minutes when the eyes had contact with molten materials. In case of wearing contact lenses, remover the lenses as soon as possible, and ask a physician for advice. When the eye had contact with materials in an ordinary solid form, rinse the eye with clean water without delay. If the discomfort persists, ask a physician for advice.

Ingestion:

Vomit as much as possible, and get medical attention when the unpleasantness remains.

5. FIRE-FIGHTING MEASURES

Extinguish media:

In case of fire, use water spray, foam, dry chemical powder, carbon dioxide or dry sand.

Extinguish media not suitable:

None

Specific hazards:

Toxic gases (carbon monoxide, nitrogen oxides, etc) will form upon combustion.

Specific methods:

Wear the fire fighting protective clothing (includes fire fighting helmet, coat, boots, and gloves) and do the extinction work from the windward.

Prohibit staying the fire occurrence place except the relating person.

Water and cool off neighboring facilities not to be sprinkled on the machine.

Appropriate measures are done so that the material that influences the environment should not flow out.

Evacuate to the safety area except the relating person.

Protections of fire-fighters:

Firefighters should wear proper protective equipment (gloves, glasses, and mask).

Wear self-contained breathing apparatus (SCBA) when toxic gases (carbon monoxide etc) will form upon combustion.

Do the extinction work from the windward to avoid inhaling toxic gases.

Wear self-contained breathing apparatus (SCBA), if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Don't touch molten.

Collect the scraps not to slip on the floor and roll.

Environmental precautions:

Don't dispose materials in environment.

Methods for cleaning up

Recovery:

As the small quantity, collect with unsparking tools (a vacuum cleaner or a broom).

Pick or collect materials with ordinary cleaning tools and put into a suitable container for disposal as a nonhazardous waste.

Use an industrial vacuum cleaner to clean up dust.

The collection thing is incinerated in a safe condition.

Disposal:

Consult an expert on the disposal of recovered material.

7. HANDLING AND STORAGE

Handling

Technical measures : Not available

Safe handling advice: Neither ignites nor explodes at room temperature.

Don't use of fire nearby because the material is combustion.

Collect the scraps not to slip on the floor and roll.

Don't touch molten form directly.
Don't allow hot materials to stay for a long time in the processing machines.
Don't adhere the materials to the skin, eyes, and clothes.
Wear proper protective equipment (gloves, glasses, and mask), if necessary.
Use exhaust device to avoid inhaling of gases generated from the molten materials.

Storage

Technical measures: Not available

Storage conditions: Keep away from heat, steam, pipe or sunlight.
Keep indoors.
Collapse of cargo piles prevention
Fall prevention.
Keep dampproof.

Incompatible products: Not available

Packaging materials: Use the paper bag lined by aluminum etc because this material is hygroscopicity.

Specific use(s): Material for molding

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Not established

Control parameters: Not established

Personal protective equipment

Respiratory protection: Use appropriate certified respirators (a dust protective mask, a simple dust protective mask), as appropriate.
Use exhaust device to handle molten materials.

Hand protection : Use appropriate certified protective equipments (gloves), as appropriate.
Use heatproof gloves to handle molten materials.

Eye protection: Wear safety glasses (normal type, side-shields' type) or goggles with/without a face protector, as appropriate.
Use safety glasses to handle molten materials.

Skin and body protection: Wear protection clothes, a protection apron, safety-shoes, and/or electric resistant shoes, as appropriate.
Use protection clothes to handle molten materials.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state

Form: Solid (pellet)

Colour: white, Various specified colors

Odour : None

pH : Not available

Boling point / Boiling range : 306±5 ℃ [1)]
(as polycondensate of 2-methyloctane-1,8-diamine, nonane-1,9- diamine and terephthalic acid)

Decomposition temperature: Not available

Flashpoint : >200℃ [1)]

Auto-ignition temperature: Not available

Explosion properties: Not available

Vapour pressures: Not available

Vapour density: Not available

Density : 1.53±0.03

Solubility (as polycondensate of 2-methyloctane-1,8-diamine, nonane-1,9-diamine and terephthalic acid)

—**water solubility:** Insoluble [1)]

—**fat solubitlity:** 1,1,1,3,3,3-hexafluoro-2-propanol: soluble [1)]

Octanol/water partition coefficient : Not available

Other data:

Flammability (solid, gas): Not available

Oxidizing properties: Not available

Relative density : Not available

Viscosity: Not available

Evaporation rate: Not available

10. STABILITY AND REACTIVITY

Stability:

This product is considered a stable material under normal and anticipated storage and handling conditions.

Possible hazardous reactions: none

Conditions to avoid: Avoid the moisture uptake because it becomes the obstacle of molding.

Materials to avoid: Not available

Hazardous decomposition products: Not available

11. TOXICOLOGICAL INFORMATION

Acute toxicity: No relevant information found.

Local effects: Not available

Eye Irritation: No relevant information found.

Skin Irritation: No relevant information found.

Sensitization: No relevant information found.

Chronic toxicity or Long **term toxicity**: No relevant information found.

Specific effect (Carcinogenicity, Mutagenicity, and Reproduction toxicity)

Carcinogenicity: No relevant information found.

Mutagenicity: No relevant information found.

Reproduction toxicity: No relevant information found.

12. ECOLOGICAL INFORMATION

Mobility: No relevant information found.

Persistence / degradability: No relevant information found.

Bioaccumulation: No relevant information found.

Eco-toxicity: No relevant information found.

13. DISPOSAL CONSIDERATIONS

Waste from residues:

This material may be burned in a chemical incinerator under national and local regulations.

Comply with all EU, with national and local regulations.

Do not dump this product into sewers, on the ground or into any body of water.

Contaminated packaging:

May be burned in a chemical incinerator under national and local regulations.

An empty container is abandoned after contents are completely removed.

14. TRANSPORT INFORMATION

International regulations : No allocated

The UN classification number : No allocated

Specific precautionary transport measures and conditions :

Collapse of cargo piles prevention.

Don't wet the package.

Avoid handling the package violently.

Keep away from flames and hot surfaces.

Keep dampproof.

15. REGULATORY INFORMATION

Hazards and safety information as written on the label : No allocated

16. OTHER INFORMATION

To the best of our knowledge, the information contained here in is accurate. However, neither Kuraray Co., Ltd. nor any subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used in caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

References

1) in house date, Kuraray Co., Ltd.

昆山永基精密电子材料有限公司(保税)
Kunshan Yongji Precise Electronic Material Co.,Ltd.
江苏省昆山开发区高科技工业园富士康路1139
Fushikang Road No.1139 Kunshan City Jiangsu
TEL:0512-57779028 FAX:0512-57784778

产 品 质 量 证 明 书

编号:IC100318021-1

料号	名称	品名/状态	规格	批号	数量（公斤）
Part No	Product Name	Hardness	Size（mm）	Lot No	Quantity(kg)
	磷铜	C5191H	0.30*19.5	1-1-157	4

Chemical Composition(%):

分析元素 Chemical Element	Cu	Sn	Zn	Ni	Pb	Sb	Bi	Si	Al	Fe	Co+Ni	Ni+Co+Fe
分析数据 Analysis Data	REM	6.10	0.005	0.015	0.001	-	-	-	<0.0005	0.001	-	-

分析元素 Chemical Element	C	P	Mn	S	Cr	Mg	In	Cd	Cu+Ag	Be	Cu+Be+Co+Ni+Fe
分析数据 Analysis Data	-	0.092	-	-	-	-	-	0.00014	-	-	-

物理性能 Physics Properties:

抗拉强度 N/mm2	延伸率（%）	屈服强度 N/mm2	硬度值 HV
Tensile intensity	Elongation(%)	Ericsen Value	Hardness Value
615	27.5	565	195

尺寸偏差 Size Deviation:

厚度（mm）(0/-0.01)	宽度（mm）(0/-0.10)	侧弯（mm/m）	翘曲(mm/m)
Thickness(mm)	Width(mm)	Bend Test(mm/m)	Warp Test(mm/m)
0.346	19.48	0.3	30

品保（章） 品管：何寿山 日期:2010-03-18 包装编号:100318-4B323-08

备注： 0.50mm铜片厚度公差范围为（+0.005/-0.01）。其它铜片厚度公差范围为（0/-0.01）mm，宽度公差范围为（0/-0.10）mm

2009永基非保税
Kunshan Yongji Precise Electronic Material Co.,Ltd.
江苏省昆山市开发区高科技工业园富士康路1139号
Fushikang Road No.1139 Kunshan City Jiangsu
TEL:0512-57779028 FAX:0512-57784778

产 品 质 量 证 明 书

编号:IC10012905-1

料号	名称	品名/状态	规格	批号	数量（公斤）
Part No	Product Name	Hardness	Size（mm）	Lot No	Quantity(kg)
	黄铜	C2680H	0.30*16.5	301214DD6	5

Chemical Composition(%):

分析元素 Chemical Element	Cu	Sn	Zn	Ni	Pb	Sb	Bi	Si	Al	Fe	Co+Ni	Ni+Co+Fe
分析数据 Analysis Data	64.62	-	REM	-	0.002	-	-	-	-	0.005	-	-

分析元素 Chemical Element	C	P	Mn	S	Cr	Mg	In	Cd	Cu+Ag	Be	Cu+Be+Co+Ni+Fe
分析数据 Analysis Data	-	-	-	-	-	-	-	-	-	-	-

物理性能 Physics Properties:

抗拉强度 N/mm2	延伸率（%）	屈服强度 N/mm2	硬度值 HV
Tensile intensity	Elongation(%)	Ericsen Value	Hardness Value
453	19	-	150

尺寸偏差 Size Deviation:

厚度（mm）(+0.01/-0.01)	宽度（mm）(0/-0.10)	侧弯（mm/m）	翘曲(mm/m)
Thickness(mm)	Width(mm)	Bend Test(mm/m)	Warp Test(mm/m)
0.498	16.47	0.7	

品保（章） 品管：李芳 日期:2010-01-29 包装编号:100128-3A324-02

备注： 0.50mm铜片厚度公差范围为（+0.01/-0.01）。其它铜片厚度公差范围为（0/-0.01）mm，宽度公差范围为（0/-0.10）mm

測試報告
Test Report

號碼(No.): ETR24C06164　　日期(Date): 10-Jan-2025　　

KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by the applicant as)：

送樣廠商(Sample Submitted By)	:	KURARAY CO., LTD.
樣品名稱(Sample Name)	:	NEW HEAT RESISTANT POLYAMIDE RESIN
樣品型號(Style/Item No.)	:	GP2450NH-2 NATURAL
批號(Lot No.)	:	4807K46

==========

收件日(Sample Receiving Date)	:	30-Dec-2024
測試期間(Testing Period)	:	30-Dec-2024 to 10-Jan-2025

測試需求(Test Requested) :

(1) 依據客戶指定，參考RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863測試鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP。 (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).)

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

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

結　　論(Conclusion) :

(1) 根據客戶所提供的樣品，其鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP的測試結果符合RoHS 2011/65/EU Annex II暨其修訂指令(EU) 2015/863之限值要求。 (Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.)

(2) 根據客戶所提供的樣品，多環芳香烴測試結果符合德國產品安全委員會(AfPS) GS PAHs第 1 類 之限值要求。(Based upon the performed tests on the submitted sample(s), the test results of PAHs (15 items) comply with the limits of PAHs requirement (Category 1) as set by German Committee on Product Safety (AfPS) GS PAHs.)

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

CHECK REPORT
PIN CODE: 34BF8813

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測試報告
Test Report

KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

測試部位敘述 (Test Part Description)

No.1 : 白色塑膠粒 (WHITE PLASTIC PELLETS)

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
鎘 (Cd) (Cadmium (Cd))	參考IEC 62321-5: 2013，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	100
鉛 (Pb) (Lead (Pb))	參考IEC 62321-5: 2013，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.)	mg/kg	2	4.49	1000
汞 (Hg) (Mercury (Hg))	參考IEC 62321-4: 2013+ AMD1: 2017，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	1000
六價鉻 Cr(VI) (Hexavalent Chromium Cr(VI))	參考IEC 62321-7-2: 2017，以紫外光-可見光分光光度計分析。(With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.)	mg/kg	8	n.d.	1000
一溴聯苯 (Monobromobiphenyl)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-
二溴聯苯 (Dibromobiphenyl)		mg/kg	5	n.d.	-
三溴聯苯 (Tribromobiphenyl)		mg/kg	5	n.d.	-
四溴聯苯 (Tetrabromobiphenyl)		mg/kg	5	n.d.	-
五溴聯苯 (Pentabromobiphenyl)		mg/kg	5	n.d.	-
六溴聯苯 (Hexabromobiphenyl)		mg/kg	5	n.d.	-
七溴聯苯 (Heptabromobiphenyl)		mg/kg	5	n.d.	-
八溴聯苯 (Octabromobiphenyl)		mg/kg	5	n.d.	-
九溴聯苯 (Nonabromobiphenyl)		mg/kg	5	n.d.	-
十溴聯苯 (Decabromobiphenyl)		mg/kg	5	n.d.	-
多溴聯苯總和 (Sum of PBBs)		mg/kg	-	n.d.	1000

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測試報告
Test Report

KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
一溴聯苯醚 (Monobromodiphenyl ether)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-
二溴聯苯醚 (Dibromodiphenyl ether)		mg/kg	5	n.d.	-
三溴聯苯醚 (Tribromodiphenyl ether)		mg/kg	5	n.d.	-
四溴聯苯醚 (Tetrabromodiphenyl ether)		mg/kg	5	n.d.	-
五溴聯苯醚 (Pentabromodiphenyl ether)		mg/kg	5	n.d.	-
六溴聯苯醚 (Hexabromodiphenyl ether)		mg/kg	5	n.d.	-
七溴聯苯醚 (Heptabromodiphenyl ether)		mg/kg	5	n.d.	-
八溴聯苯醚 (Octabromodiphenyl ether)		mg/kg	5	n.d.	-
九溴聯苯醚 (Nonabromodiphenyl ether)		mg/kg	5	n.d.	-
十溴聯苯醚 (Decabromodiphenyl ether)		mg/kg	5	n.d.	-
多溴聯苯醚總和 (Sum of PBDEs)		mg/kg	-	n.d.	1000
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP))	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1)		mg/kg	50	n.d.	-
鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0)		mg/kg	50	n.d.	-
鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DNOP)) (CAS No.: 117-84-0)		mg/kg	50	n.d.	-

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測試報告
Test Report

KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
六溴環十二烷及所有主要被辨別出的異構物(HBCDD) (α- HBCDD, β- HBCDD, γ- HBCDD) (Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α- HBCDD, β- HBCDD, γ- HBCDD)) (CAS No.: 25637-99-4, 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	參考IEC 62321-9: 2021，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-9: 2021, analysis was performed by GC/MS.)	mg/kg	20	n.d.	-
全氟辛烷磺酸及其鹽類 (PFOS and its salts) (CAS No.: 1763-23-1 and its salts)	參考US EPA 3550C: 2007，以液相層析串聯質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by LC/MS/MS.)	mg/kg	10	n.d.	-
全氟辛酸及其鹽類 (PFOA and its salts) (CAS No.: 335-67-1 and its salts)	參考US EPA 3550C: 2007，以液相層析串聯質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by LC/MS/MS.)	mg/kg	10	n.d.	-
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-8)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	596	-
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1)		mg/kg	50	n.d.	-
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)		mg/kg	50	n.d.	-
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)		mg/kg	50	n.d.	-

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測試報告
Test Report

KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

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

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KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

備註(Note)：

1. mg/kg = ppm；0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n.d. = Not Detected (未檢出)；小於MDL / Less than MDL
4. "-" = Not Regulated (無規格值)
5. 除非另有說明，參照ILAC-G8:09/2019決定規則，採用簡單允收規則之二分法(w=0)進行符合性判定；根據此規則，符合性結果之判定係以測試結果與限值做比較。(Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.)

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TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

PAHs Remark：

Δ 德國產品安全委員會(AfPS): GS PAHs 要求

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

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

單位(Unit)：mg/kg

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KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

PFAS Remark：

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

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFOS, 及其鹽&衍生物 (PFOS, its salts & derivatives)	全氟辛烷磺酸 (Perfluorooctane sulfonates) (PFOS)	1763-23-1
	全氟辛基磺酸鉀 (PFOS-K) Potassium perfluorooctanesulfonate (PFOS-K)	2795-39-3
	全氟辛基磺酸鋰 (PFOS-Li) Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	29457-72-5
	全氟辛基磺酸銨 (PFOS-NH_4) Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH_4)	29081-56-9
	全氟辛基磺酸二乙醇銨 (PFOS-$NH(OH)_2$) Perfluorooctane sulfonate diethanolamine salt (PFOS-$NH(OH)_2$)	70225-14-8
	全氟辛基磺酸四乙基銨 (PFOS-$N(C_2H_5)_4$) Perfluorooctanesulfonic acid,tetraethylammonium salt (PFOS-$N(C_2H_5)_4$)	56773-42-3
	全氟辛基磺酸二癸二甲基銨 (PFOS-DDA) N-decyl-N,N-dimethyldecan-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-sulfonate (PFOS-DDA)	251099-16-8
	全氟辛基磺酸四丁基銨 (PFOS-$N(C_4H_9)_4$) TetrabutylAmmonium perfluorooctanesulfonate (PFOS-$N(C_4H_9)_4$)	111873-33-7
	全氟辛基磺醯氟 (POSF) Perfluorooctane sulfonyl fluoride (POSF)	307-35-7
	全氟辛基磺酸鎂 (PFOS-Mg) Perfluorooctanesulfonic acid, magnesium salt (PFOS-Mg)	91036-71-4

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KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFOS, 及其鹽&衍生物 (PFOS, its salts & derivatives)	全氟辛基磺酸鈉 (PFOS-Na) Perfluorooctanesulfonic acid, sodium salt (PFOS-Na)	4021-47-0
	全氟辛烷磺酸哌啶 Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctanesulfonate	71463-74-6
	全氟辛烷磺酸鹽 Perfluorooctanesulfonate (anion)	45298-90-6
	全氟辛烷磺酸與 N,N-二乙基乙胺 (1:1) (PFOS-N(C_2H_5)$_3$) 1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, compd. with N,N-diethylethanamine (1:1) (PFOS-N(C_2H_5)$_3$)	54439-46-2
	N,N,N-三甲基-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟-1-辛烷磺酸甲銨(1:1) (PFOS-N(CH_3)$_4$) Methanaminium, N,N,N-trimethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1) (PFOS-N(CH_3)$_4$)	56773-44-5
	1-五胺，N,N,N-三丙基-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟-1-辛烷磺酸鹽(1:1) (PFOS-N(C_3H_7)$_3$(C_5H_{11})) 1-Pentanaminium, N,N,N-tripropyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1) (PFOS-N(C_3H_7)$_3$(C_5H_{11}))	56773-56-9
	1-丁銨，N,N-二丁基-N-甲基-，1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8 ,8-十七氟-1-辛烷磺酸鹽 (1:1) (PFOS-N(C_4H_9)$_3$(CH_3)) 1-Butanaminium, N,N-dibutyl-N-methyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1) (PFOS-N(C_4H_9)$_3$(CH_3))	124472-68-0
	碘鎓，雙[4-(1,1-二甲基乙基)苯基]-，1,1,2,2,3,3,4,4,5,5,6,6,7,7 ,8,8,8 -十七氟-1-辛烷磺酸鹽 (1:1) Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1)	213740-80-8
	二苯基鋶(2,4,6-三甲基苯基)-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8 ,8-十七氟-1-辛烷磺酸鹽 (1:1) Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1)	258341-99-0
	吡啶鎓，1-十六烷基-，1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟-1 -辛烷磺酸鹽 (1:1) Pyridinium, 1-hexadecyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1)	334529-63-4

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KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFOS, 及其鹽&衍生物 (PFOS, its salts & derivatives)	1-癸胺，N,N,N-三乙基-，1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟-1 -辛烷磺酸鹽(1:1) 1-Decanaminium, N,N,N-triethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1)	773895-92-4
	全氟辛烷磺酸四丁基鏻 (PFOS-P(C_4H_9)$_4$)) Tetrabutylphosphonium perfluorooctane sulfonate (PFOS-P(C_4H_9)$_4$))	2185049-59-4
	全氟辛烷磺酸二乙胺鹽 (PFOS-$C_4H_{11}N$) Perfluorooctanesulfonic acid diethylamine salt (PFOS-$C_4H_{11}N$)	2205029-08-7
	庚基二甲基{2-[(2-甲基丙-2-烯酰基)氧基]乙基}全氟辛烷磺酸氮紮鹽 (PFOS-$C_{15}H_{30}NO_2$) Heptyldimethyl{2-[(2-methylprop-2-enoyl)oxy]ethyl}azanium perfluorooctanesulfonate (PFOS-$C_{15}H_{30}NO_2$)	1203998-97-3
	1-辛烷磺酸，1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟-,1,1' -酸酐 (PFOSAN) 1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, 1,1'-anhydride (PFOSAN)	423-92-7
PFOA, 及其鹽&衍生物 (PFOA, its salts & derivatives)	全氟辛酸 (Perfluorooctanoic acid) (PFOA)	335-67-1
	全氟辛酸鈉 (PFOA-Na) Sodium perfluorooctanoate (PFOA-Na)	335-95-5
	全氟辛酸鉀 (PFOA-K) Potassium perfluorooctanoate (PFOA-K)	2395-00-8
	全氟辛酸銀 (PFOA-Ag) Silver perfluorooctanote (PFOA-Ag)	335-93-3
	全氟辛氟 (PFOA-F) Perfluorooctanoyl fluoride (PFOA-F)	335-66-0
	全氟辛酸銨 (APFO) Ammonium pentadecafluorooctanoate (APFO)	3825-26-1
	全氟辛酸鋰 (PFOA-Li) Lithium perfluorooctanoate (PFOA-Li)	17125-58-5
	全氟辛酸鈷 (PFOA-Co) Cobalt perfluorooctanoate (PFOA-Co)	35965-01-6
	全氟辛酸銫 (PFOA-Cs) Cesium perfluorooctanoate (PFOA-Cs)	17125-60-9

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KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFOA, 及其鹽&衍生物 (PFOA, its salts & derivatives)	全氟辛酸鉻 (PFOA-Cr(3^+)) Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, chromium(3+) (PFOA-Cr(3^+))	68141-02-6
	全氟辛酸-哌嗪(2:1) PFOA-NH($C_4H_{10}N$) Pentadecafluorooctanoic acid--piperazine (2/1)PFOA-NH($C_4H_{10}N$)	423-52-9
	全氟辛酸鹽 Pentadecafluorooctanoate (anion)	45285-51-6
	全氟辛酸酐 Perfluorooctanoic Anhydride	33496-48-9
	乙銨，N,N,N-三乙基-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十五氟辛酸(1:1) Ethanaminium, N,N,N-triethyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoate (1:1)	98241-25-9
	全氟辛酸四甲銨鹽 Tetramethylammoniumperfluoroctanoat	32609-65-7
	1-丙銨，N,N,N-三丙基-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十五氟辛酸(1:1) 1-Propanaminium, N,N,N-tripropyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoate (1:1)	277749-00-5
	辛酸，2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十五氟-鉀鹽，水合物 (1:1:2) (PFOA-K(H_2O)$_2$) Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, potassium salt, hydrate (1:1:2) (PFOA-K(H_2O)$_2$)	98065-31-7
	辛酸，2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十五氟-，化合物。與乙胺 (1:1) (PFOA-C_2H_7N) Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, compd. with ethanamine (1:1) (PFOA-C_2H_7N)	1376936-03-6
	十五氟辛酸化合物與吡啶 (1:1) (9CI) (PFOA-C_5H_5N) Octanoic acid, pentadecafluoro-, compd. with pyridine (1:1) (9CI) (PFOA-C_5H_5N)	95658-47-2

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測試報告
Test Report

KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFOA, 及其鹽&衍生物 (PFOA, its salts & derivatives)	十五氟辛酸-1-苯基哌嗪(1:1) (PFOA-$C_{10}H_{14}N_2$) Pentadecafluorooctanoic acid- 1-phenylpiperazine(1:1) (PFOA-$C_{10}H_{14}N_2$)	1514-68-7
	1-辛胺，N,N,N-三甲基-，2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十五氟辛酸(1:1) (PFOA- $C_{11}H_{26}N$) 1-Octanaminium, N,N,N-trimethyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoate (1:1) (PFOA- $C_{11}H_{26}N$)	927835-01-6

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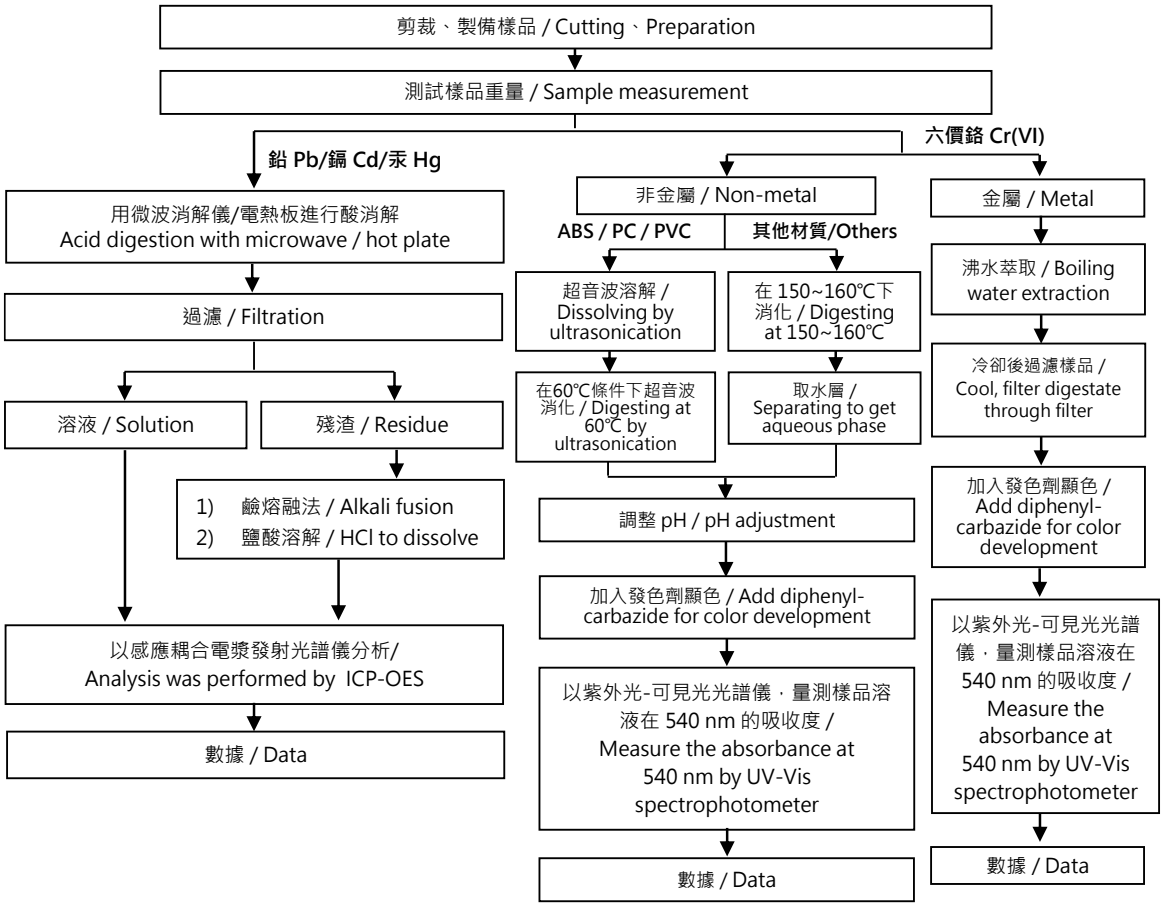
KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

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

根據以下的流程圖之條件，樣品已完全溶解。（六價鉻測試方法除外）

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

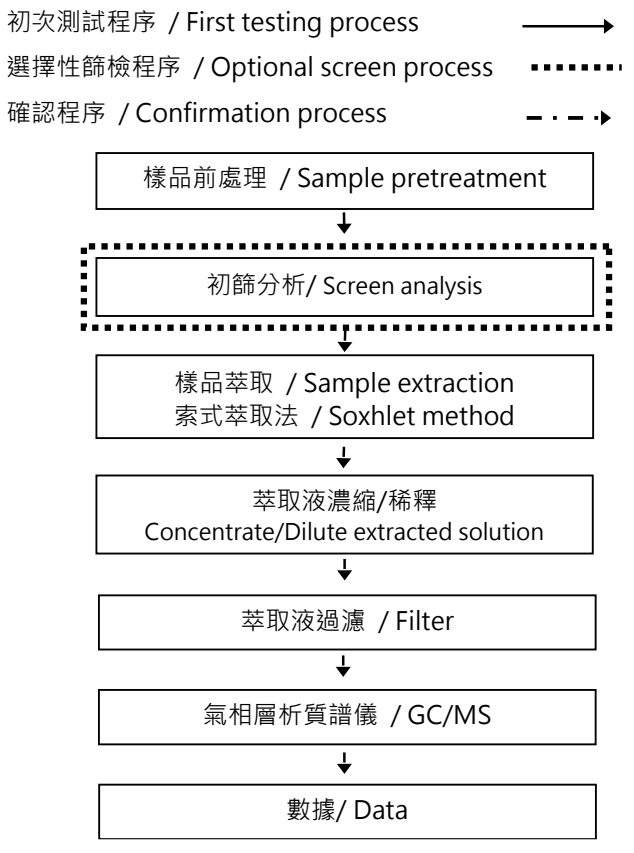
（Cr^{6+} test method excluded）



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TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

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

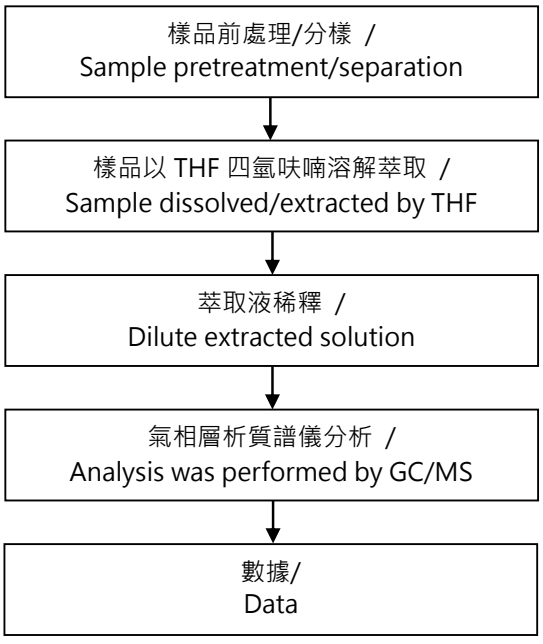


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TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

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

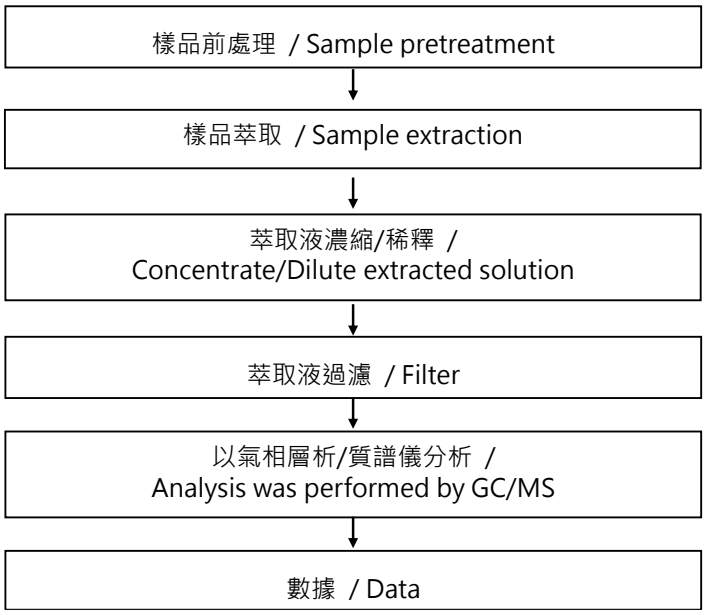
【測試方法/Test method: IEC 62321-8】



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TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

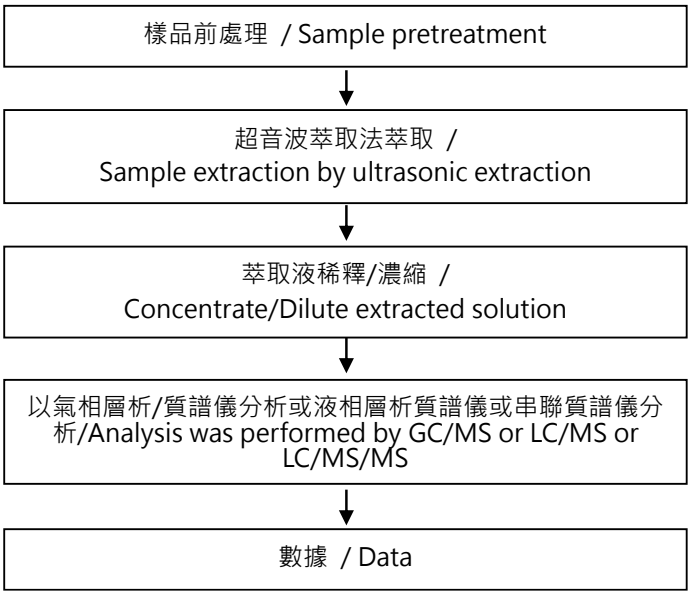
六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD



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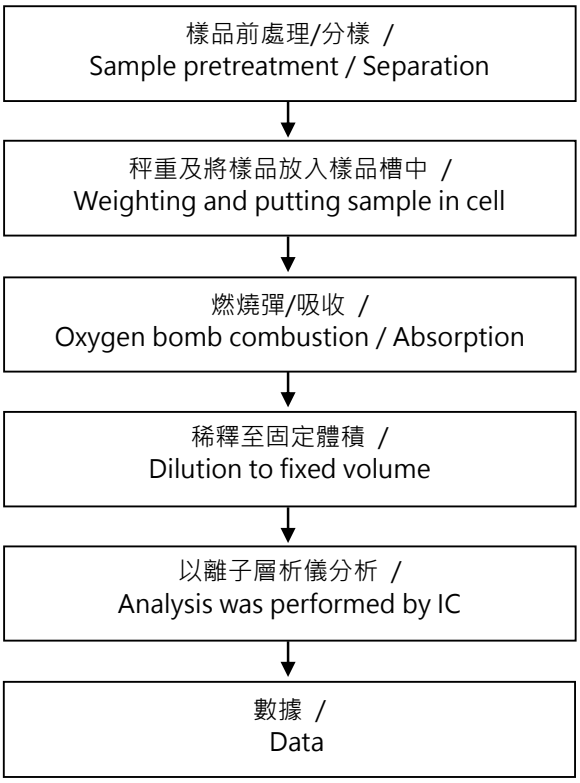
全氟化合物(包含全氟辛酸/全氟辛烷磺酸/其相關化合物等等)分析流程圖 / Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



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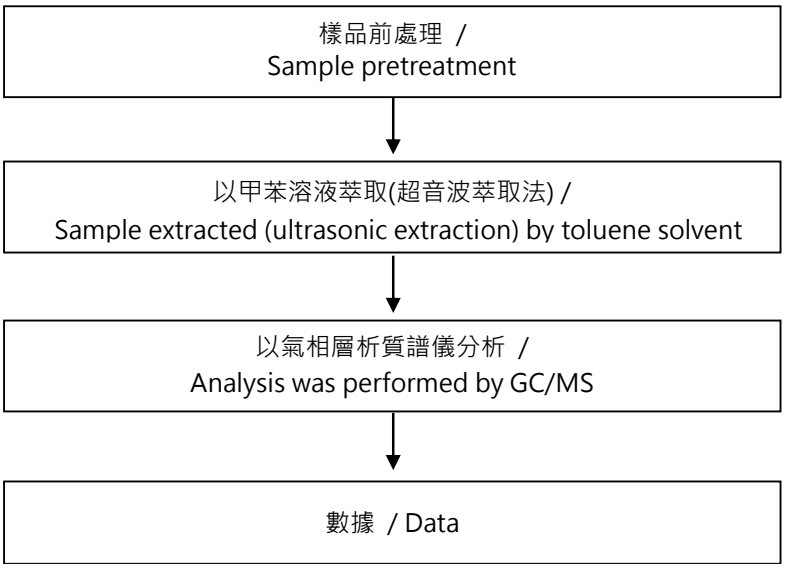
鹵素分析流程圖 / Analytical flow chart - Halogen



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



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測試報告
Test Report

號碼(No.): ETR24C06164　　日期(Date): 10-Jan-2025　　

KURARAY CO., LTD.
TOKIWABASHI TOWER, 2-6-4, OTEMACHI, CHIYODA-KU, TOKYO, 100-0004, JAPAN

*** 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.)

ETR24C06164



** 報告結尾 (End of Report) **

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检测
TESTING
CNAS L0599

Test Report

No.: SHAEC25016443413 **Date:** Jul 08, 2025

Client Name: Kunshan Yongji Precise Electronic Material Co.,Ltd

Client Address: Yuyang Road No.898 Kunshan City Jiangsu

Sample Name: C5191(QSN6.5-0.1)(CuSn6)

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

SGS Job No.: SHP25-022075

Sample Receiving Date: Jul 02, 2025

Testing Period: Jul 02, 2025 ~ Jul 08, 2025

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

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

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

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

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

Jenny Lan
Approved Signatory

Scan to see the report

839A90EE

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Test Result(s):

Test Part Description：

SN ID	Sample No.	SGS Sample ID	Description
SN1	A7	SHA25-0164434-0001.C007	Copper metal

Remarks:

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

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

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC62321-8:2017, analysis was performed by ICP-OES/AAS, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A7
Lead (Pb)	1000	mg/kg	2	8
Mercury (Hg)	1000	mg/kg	2	ND
Cadmium (Cd)	100	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	μg/cm²	0.10	ND
Polybromobiphenyl (PBB)	1000	mg/kg	-	ND
Monobrominated biphenyl (MonoBB)	-	mg/kg	5	ND
Dibrominated biphenyl (DiBB)	-	mg/kg	5	ND
Tribrominated biphenyl (TriBB)	-	mg/kg	5	ND
Tetrabrominated biphenyl (TetraBB)	-	mg/kg	5	ND
Pentabrominated biphenyl (PentaBB)	-	mg/kg	5	ND
Hexabrominated biphenyl (HexaBB)	-	mg/kg	5	ND
Heptabrominated biphenyl (HeptaBB)	-	mg/kg	5	ND
Octabrominated biphenyl (OctaBB)	-	mg/kg	5	ND
Nonabrominated biphenyl (NonaBB)	-	mg/kg	5	ND
Decabrominated biphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether(PBDE)	1000	mg/kg	-	ND
Monobrominated diphenyl ether (MonoBDE)	-	mg/kg	5	ND
Dibrominated diphenyl ether (DiBDE)	-	mg/kg	5	ND
Tribrominated diphenyl ether (TriBDE)	-	mg/kg	5	ND
Tetrabrominated diphenyl ether (TetraBDE)	-	mg/kg	5	ND
Pentabrominated diphenyl ether (PentaBDE)	-	mg/kg	5	ND
Hexabrominated diphenyl ether (HexaBDE)	-	mg/kg	5	ND
Heptabrominated diphenyl ether (HeptaBDE)	-	mg/kg	5	ND

检验检测专用章 Inspection & Testing Services
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Test Item(s)	Limit	Unit(s)	MDL	A7
Octabrominated diphenyl ether (OctaBDE)	-	mg/kg	5	ND
Nonabrominated diphenyl ether (NonaBDE)	-	mg/kg	5	ND
Decabrominated diphenyl ether (DecaBDE)	-	mg/kg	5	ND
Bis(2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Diisobutyl phthalate (DIBP)	1000	mg/kg	50	ND

Notes:

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

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

(3) ▼ =
a. The sample is positive for Cr(VI) if the Cr(VI)concentration is greater than 0.13 μg/cm^2. The sample coating is considered to contain Cr(VI).
b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 μg/cm^2). The coating is considered a non-Cr(VI) based coating.
c. The result between 0.10 μg/cm^2 and 0.13 μg/cm^2 is considered to be inconclusive-unavoidable coating variations may influence the determination.

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

(4) Test item PBB,PBDE,Phthalates are not included in CNAS Accredited Scope for our laboratory.

Element(s)

Test Method: With reference to SHTC-CHEM-SOP-53-T, analysis was performed by ICP-OES/AAS.

Test Item(s)	Unit(s)	MDL	A7
Antimony(Sb)	mg/kg	10	ND
Beryllium(Be)	mg/kg	5	ND
Arsenic(As)	mg/kg	10	ND

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

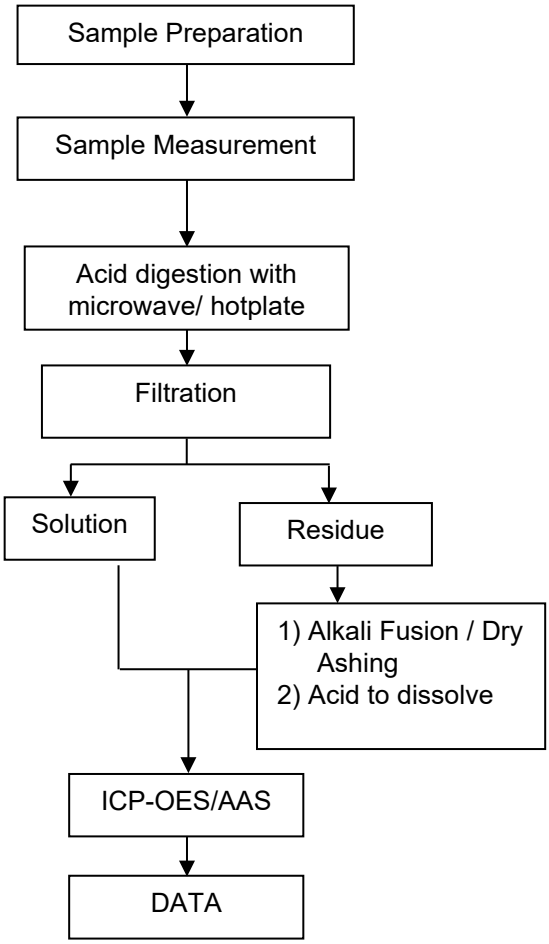
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Elements Testing Flow Chart

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

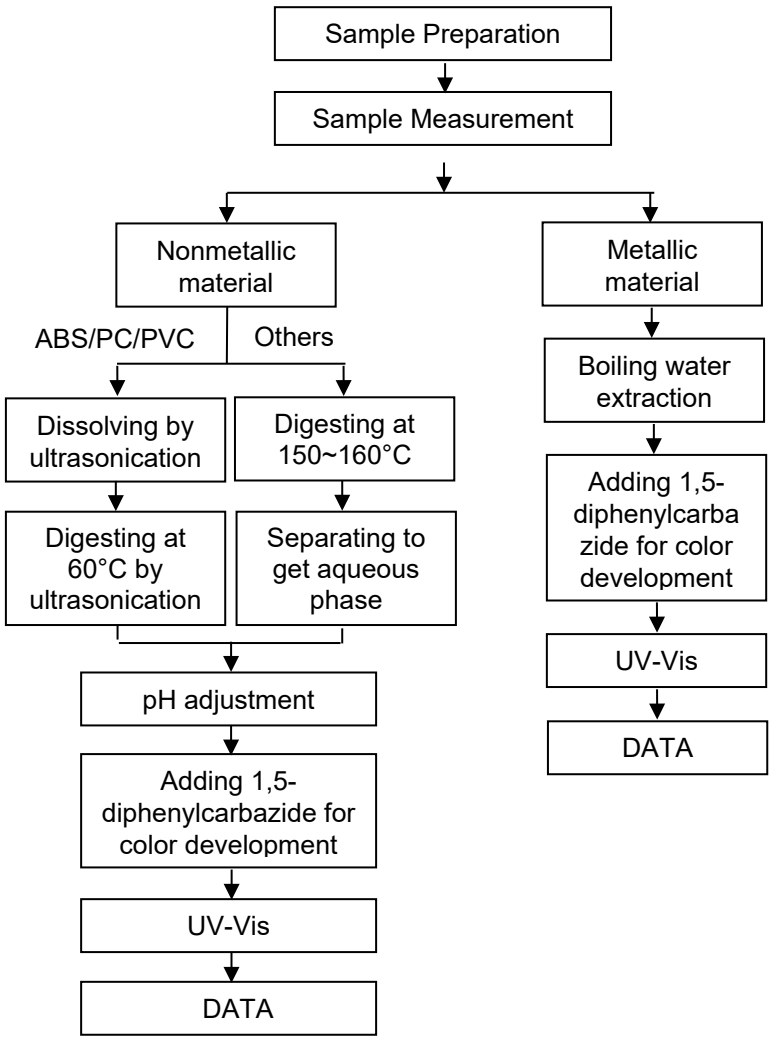


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Hexavalent Chromium (Cr(VI)) Testing Flow Chart

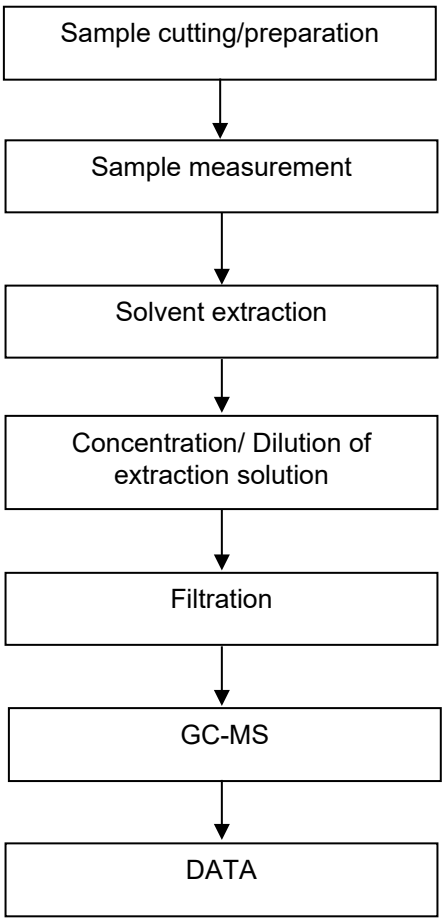


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PBB/PBDE Testing Flow Chart

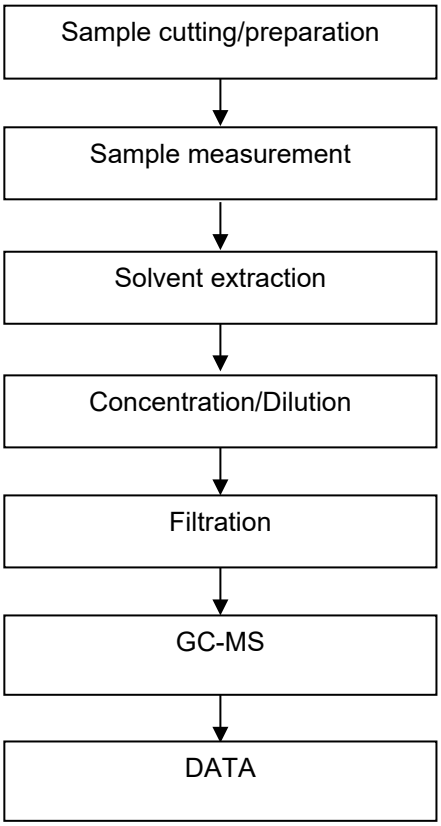


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Phthalates Testing Flow Chart



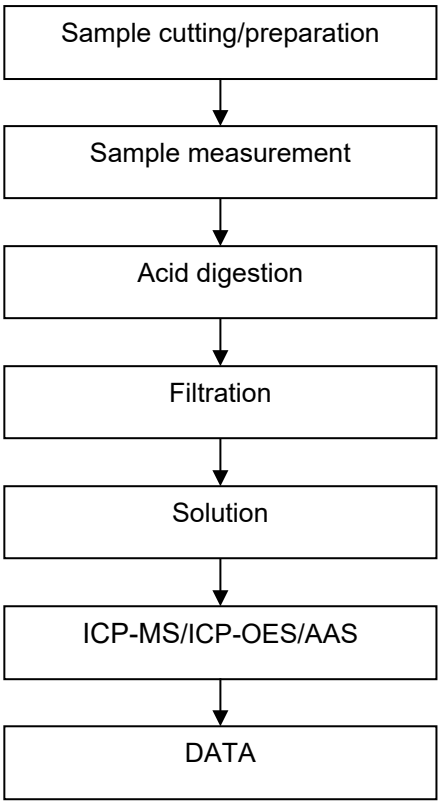
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Elements Testing Flow Chart



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Sample Photo:



SHA25-0164434-0001.C007

SGS authenticate the photo on original report only

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CNAS L0599

Test Report

No.: SHAEC25016443407 **Date:** Jul 08, 2025

Client Name: Kunshan Yongji Precise Electronic Material Co.,Ltd

Client Address: Yuyang Road No.898 Kunshan City Jiangsu

Sample Name: C2680（H65）

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

SGS Job No.: SHP25-022075

Sample Receiving Date: Jul 02, 2025

Testing Period: Jul 02, 2025 ~ Jul 08, 2025

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

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

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

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass
Element(s)	See Results
Perfluorooctanoic acid (PFOA) and its salts, Perfluorooctane sulfonic acid (PFOS) and its derivatives*	See Results

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

Jenny Lan
Approved Signatory

Scan to see the report

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Test Result(s):

Test Part Description：

SN ID	Sample No.	SGS Sample ID	Description
SN1	A4	SHA25-0164434-0001.C004	Yellow metal

Remarks:

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

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

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC62321-8:2017, analysis was performed by ICP-OES/AAS, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A4
Lead (Pb)	1000	mg/kg	2	64
Mercury (Hg)	1000	mg/kg	2	ND
Cadmium (Cd)	100	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	μg/cm²	0.10	ND
Polybromobiphenyl (PBB)	1000	mg/kg	-	ND
Monobrominated biphenyl (MonoBB)	-	mg/kg	5	ND
Dibrominated biphenyl (DiBB)	-	mg/kg	5	ND
Tribrominated biphenyl (TriBB)	-	mg/kg	5	ND
Tetrabrominated biphenyl (TetraBB)	-	mg/kg	5	ND
Pentabrominated biphenyl (PentaBB)	-	mg/kg	5	ND
Hexabrominated biphenyl (HexaBB)	-	mg/kg	5	ND
Heptabrominated biphenyl (HeptaBB)	-	mg/kg	5	ND
Octabrominated biphenyl (OctaBB)	-	mg/kg	5	ND
Nonabrominated biphenyl (NonaBB)	-	mg/kg	5	ND
Decabrominated biphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether(PBDE)	1000	mg/kg	-	ND
Monobrominated diphenyl ether (MonoBDE)	-	mg/kg	5	ND
Dibrominated diphenyl ether (DiBDE)	-	mg/kg	5	ND
Tribrominated diphenyl ether (TriBDE)	-	mg/kg	5	ND
Tetrabrominated diphenyl ether (TetraBDE)	-	mg/kg	5	ND
Pentabrominated diphenyl ether (PentaBDE)	-	mg/kg	5	ND
Hexabrominated diphenyl ether (HexaBDE)	-	mg/kg	5	ND
Heptabrominated diphenyl ether (HeptaBDE)	-	mg/kg	5	ND

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Test Item(s)	Limit	Unit(s)	MDL	A4
Octabrominated diphenyl ether (OctaBDE)	-	mg/kg	5	ND
Nonabrominated diphenyl ether (NonaBDE)	-	mg/kg	5	ND
Decabrominated diphenyl ether (DecaBDE)	-	mg/kg	5	ND
Bis(2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Diisobutyl phthalate (DIBP)	1000	mg/kg	50	ND

Notes:
(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
(2) IEC 62321 series is equivalent to EN 62321 series.
(3) ▼ =
a. The sample is positive for Cr(VI) if the Cr(VI)concentration is greater than 0.13 μg/cm^2. The sample coating is considered to contain Cr(VI).
b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 μg/cm^2). The coating is considered a non-Cr(VI) based coating.
c. The result between 0.10 μg/cm^2 and 0.13 μg/cm^2 is considered to be inconclusive-unavoidable coating variations may influence the determination.

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.
(4) Test item PBB,PBDE,Phthalates are not included in CNAS Accredited Scope for our laboratory.

Element(s)

Test Method: With reference to SHTC-CHEM-SOP-53-T, analysis was performed by ICP-OES/AAS.

Test Item(s)	Unit(s)	MDL	A4
Antimony(Sb)	mg/kg	10	ND
Beryllium(Be)	mg/kg	5	ND
Arsenic(As)	mg/kg	10	ND

Perfluorooctanoic acid (PFOA) and its salts, Perfluorooctane sulfonic acid (PFOS) and its derivatives*

Test Method: Modified EN 17681-1:2022, analysis was performed by LC-MS or LC-MS/MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A4
PFOS, its salts and related compounds				
Perfluorooctane sulfonic acid (PFOS), its salts^	1763-23-1	mg/kg	0.010	ND
N-ethylperfluoro-1-octanesulfonamide (N-EtFOSA)	4151-50-2	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonamide (N-MeFOSA)	31506-32-8	mg/kg	0.010	ND
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (N-EtFOSE)	1691-99-2	mg/kg	0.010	ND

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Test Item(s)	CAS No.	Unit(s)	MDL	A4
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol (N-MeFOSE)	24448-09-7	mg/kg	0.010	ND
Perfluorooctane Sulfonamide (PFOSA), its salts^	754-91-6	mg/kg	0.010	ND
Perfluorooctane sulfonamidoacetic Acid (FOSAA), its salts^	2806-24-8	mg/kg	0.010	ND
N-Methylperfluoro-1-octanesulfonamidoacetic Acid (N-MeFOSAA), its salts^	2355-31-9	mg/kg	0.010	ND
N-Ethylperfluorooctane sulfonamidoacetic Acid (N-EtFOSAA), its salts^	2991-50-6	mg/kg	0.010	ND
Sum of Perfluorooctane sulfonic acid (PFOS) and its derivatives	-	mg/kg	-	ND
PFOA, its salts				
Perfluorooctanoic acid (PFOA), its salts^	335-67-1	mg/kg	0.010	ND

Notes:
1. ^=Substances refer to its salts/derivative listed in below table.

Substance Name	**CAS No.**
PFOS, its salts & derivatives	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1
Potassium Perfluorooctanesulfonate (PFOS-K)	2795-39-3
Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	29457-72-5
Sodium perfluorooctanesulfonate (PFOS-Na)	4021-47-0
Ammonium perfluorooctanesulfonate (PFOS-NH_4)	29081-56-9
Perfluorooctane sulfonate diethanolamine salt (PFOS-$NH_2(C_2H_4OH)_2$)	70225-14-8
Perfluorooctanesulfonic acid,tetraethylammonium salt (PFOS-$N(C_2H_5)_4$)	56773-42-3
N-decyl-N,N-dimethyldecan-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-sulfonate (PFOS-$N(C_{10}H_{21})_2(CH_3)_2$)	251099-16-8
TetrabutylAmmonium perfluorooctanesulfonate (PFOS-$N(C_4H_9)_4$)	111873-33-7
Perfluorooctane Sulfonyl fluoride (PFOS-F)	307-35-7
Magnesium bis(heptadecafluorooctanesulphonate) (PFOS-Mg)	91036-71-4
Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctanesulfonate	71463-74-6
Perfluorooctanesulfonate	45298-90-6
Triethylammonium perfluorooctane sulfonate (PFOS-$N(C_2H_5)_3$)	54439-46-2
Tetramethylammonium perfluorooctane sulfonate (PFOS-$N(CH_3)_4$)	56773-44-5
N,N,N-Tripropylpentan-1-aminium heptadecafluorooctane-1-sulfonate (PFOS-$N(C_3H_7)_3(C_5H_{11})$)	56773-56-9
N,N-Dibutyl-N-methylbutan-1-aminium heptadecafluorooctane-1-sulfonate (PFOS-$N(C_4H_9)_3(CH_3)$)	124472-68-0

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Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with perfluoro-1-octanesulfonic acid (1:1)	213740-80-8
Diphenyl(2,4,6-trimethylphenyl)sulfonium perfluoro-1-octanesulfonate	258341-99-0
1-Hexadecylpyridinium perfluoro-1-octanesulfonate	334529-63-4
N,N,N-Triethyldecan-1-aminium heptadecafluorooctane-1-sulfonate	773895-92-4
Tetrabutylphosphonium perfluorooctane sulfonate (PFOS-P ($C_4H_9)_4$))	2185049-59-4
Perfluorooctanesulfonic acid diethylamine salt (PFOS-$C_4H_{11}N$)	2205029-08-7
heptyldimethyl{2-[(2-methylprop-2-enoyl)oxy]ethyl}azanium heptadecafluorooctane-1-sulfonate (PFOS-$C_{15}H_{30}NO_2$)	1203998-97-3
Perfluorooctane sulfonic anhydride (PFOSAN)	423-92-7
FOSAA, its salts	
Perfluorooctane sulfonamidoacetic Acid (FOSAA)	2806-24-8
N-[(Perfluorooctyl)sulfonyl]glycinate (FOSAA(anion))	909405-47-6
N-[(Perfluorooctyl)sulfonyl]glycine potassium salt (1:1) (FOSAA-K)	75260-69-4
N-[(Perfluorooctyl)sulfonyl]glycine sodium salt (1:1) (FOSAA-Na)	115716-87-5
N-MeFOSAA, its salts	
N-Methylperfluoro-1-octanesulfonamidoacetic Acid (N-MeFOSAA)	2355-31-9
2-(N-Methylperfluorooctanesulfonamido)acetate (N-Me-FOSAA(anion))	909405-48-7
Potassium N-((heptadecafluorooctyl)sulphonyl)-N-methylglycinate (N-Me-FOSAA-K)	70281-93-5
N-EtFOSAA, its salts	
N-Ethylperfluorooctane sulfonamidoacetic Acid (N-EtFOSAA)	2991-50-6
Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]-, potassium salt (N-Et-FOSAA-K)	2991-51-7
2-(N-Ethyl-perfluorooctanesulfonamido)acetate (N-Et-FOSAA(anion))	909405-49-8
Ammonium 2-(N-ethylperfluorooctanesulfonamido)acetate (N-Et-FOSAA-NH_4)	2991-52-8
Sodium 2-(N-ethylperfluorooctanesulfonamido)acetate (N-Et-FOSAA-Na)	3871-50-9
PFOSA, its salts	
Perfluorooctane Sulfonamide (PFOSA)	754-91-6
Perfluorooctanesulfonamide lithium salt (1:1) (PFOSA-Li)	76752-79-9
Perfluorooctanesulfonamide Sodium salt (1:1) (PFOSA-Na)	76752-78-8
Perfluorooctanesulfonamide Potassium salt (1:1) (PFOSA-K)	76752-70-0
Perfluorooctanesulfonamide Ammonium salt (1:1) (PFOSA-NH_4)	76752-72-2
Heptadecafluorooctane-1-sulphonamide, compound with triethylamine (1:1) (PFOSA-$C_6H_{15}N$)	76752-82-4
PFOA, its salts & derivatives	
Perfluorooctanoic acid (PFOA)	335-67-1
Sodium perfluorooctanoate (PFOA-Na)	335-95-5
Potassium perfluorooctanoate (PFOA-K)	2395-00-8
Silver perfluorooctanote (PFOA-Ag)	335-93-3
Perfluorooctanoyl fluoride (PFOA-F)	335-66-0

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Ammonium pentadecafluorooctanoate (APFO)	3825-26-1
Lithium perfluorooctanoate (PFOA-Li)	17125-58-5
Cobalt perfluorooctanoate (PFOA-Co)	35965-01-6
Cesium perfluorooctanoate (PFOA-Cs)	17125-60-9
Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, chromium(3+) (PFOA-Cr(3+))	68141-02-6
Pentadecafluorooctanoic acid--piperazine (2/1) (PFOA-NH($C_4H_{10}N$))	423-52-9
Pentadecafluorooctanoate (anion)	45285-51-6
Perfluorooctanoic Anhydride	33496-48-9
N,N,N-Triethylethanaminium perfluorooctanoate	98241-25-9
Perfluorooctanoate N,N,N-Trimethylmethanaminium	32609-65-7
Tetrapropylammonium perfluorooctanoate	277749-00-5
Potassium pentadecafluorooctanoate--water (1/1/2) (PFOA-K(H_2O)$_2$)	98065-31-7
Perfluorooctanoic acid compd. with ethanamine (1:1) (PFOA-C_2H_7N)	1376936-03-6
Pentadecafluorooctanoic acid--pyridine (1/1) (PFOA-C_5H_5N)	95658-47-2
pentadecafluorooctanoic acid- 1-phenylpiperazine(1:1) (PFOA-$C_{10}H_{14}N_2$)	1514-68-7
N,N,N-Trimethyloctan-1-aminium pentadecafluorooctanoate (PFOA-$C_{11}H_{26}N$)	927835-01-6

Remark:
Test item marked"*" in this report are not included in CNAS Accredited Scope for our laboratory.
Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (*w*=0) stated in ILAC-G8:09/2019.

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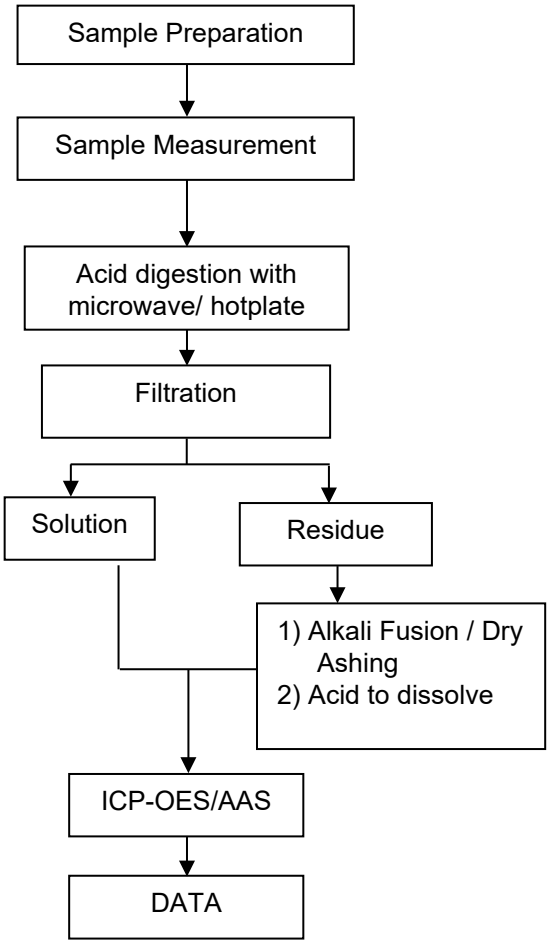
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Elements Testing Flow Chart

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

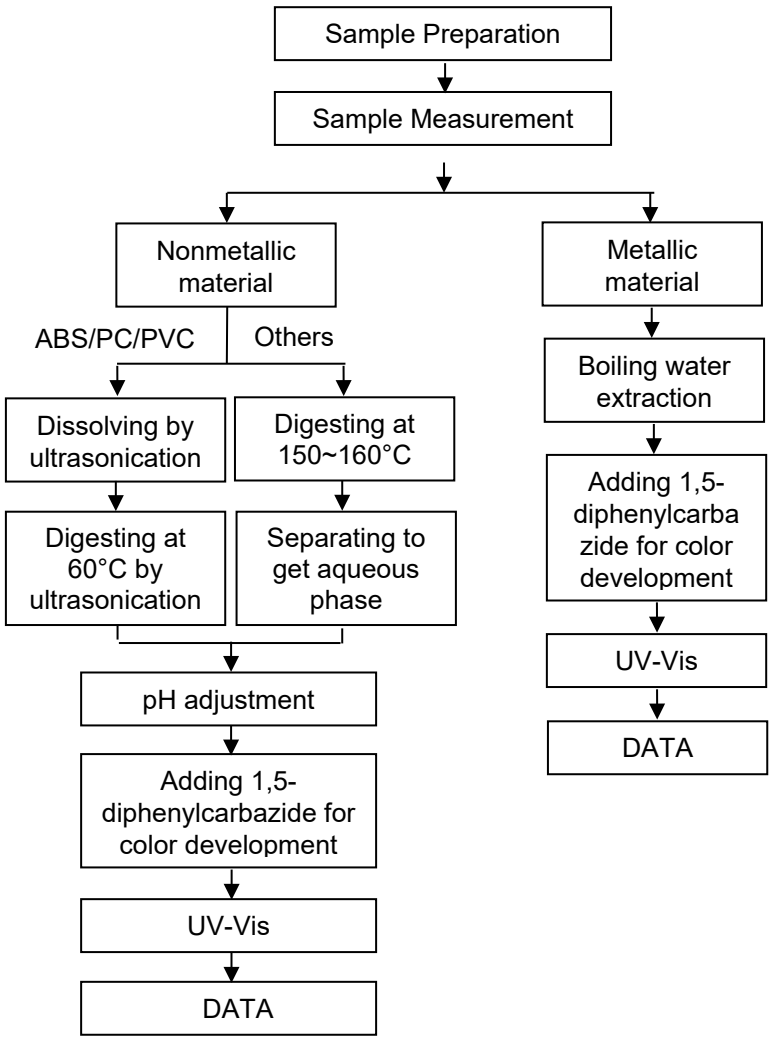


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Hexavalent Chromium (Cr(VI)) Testing Flow Chart

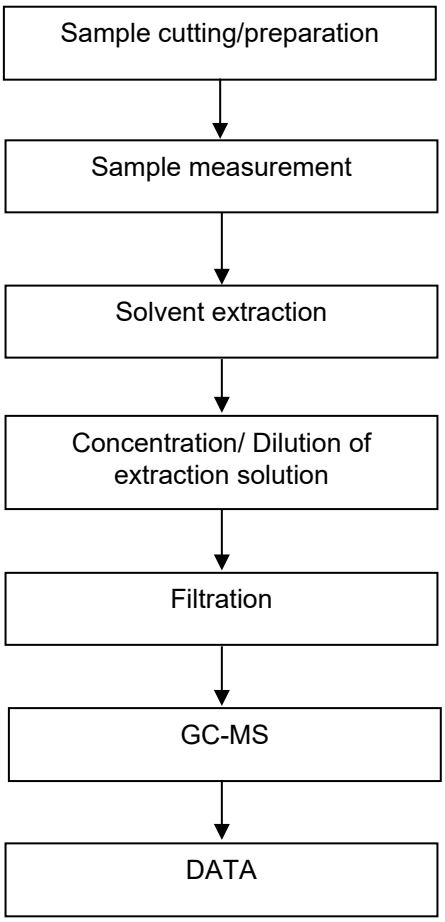


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PBB/PBDE Testing Flow Chart

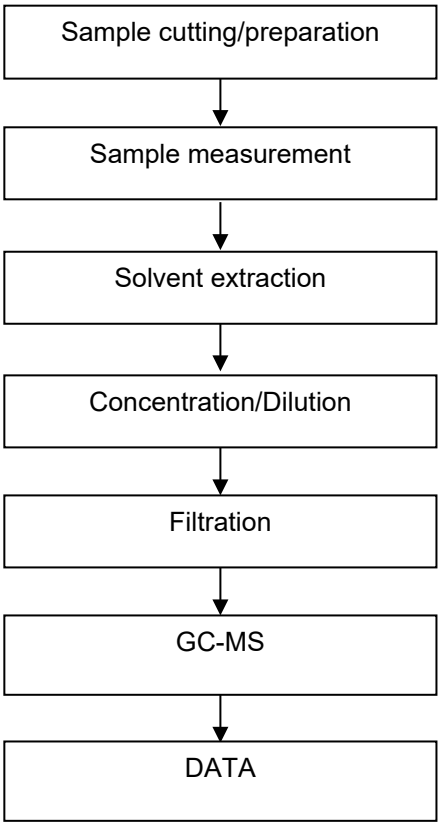


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Phthalates Testing Flow Chart

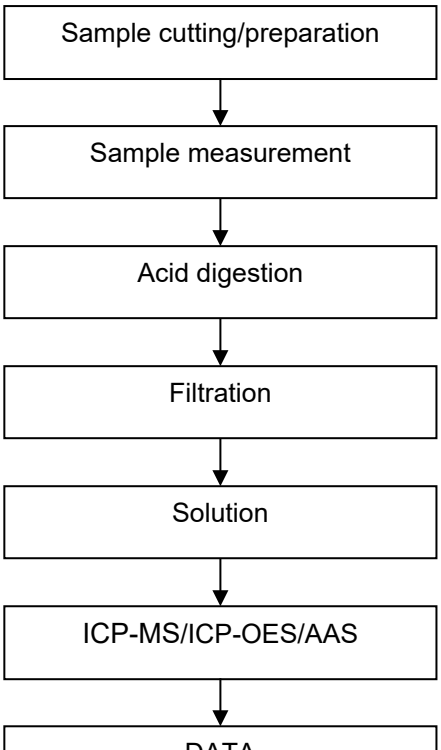


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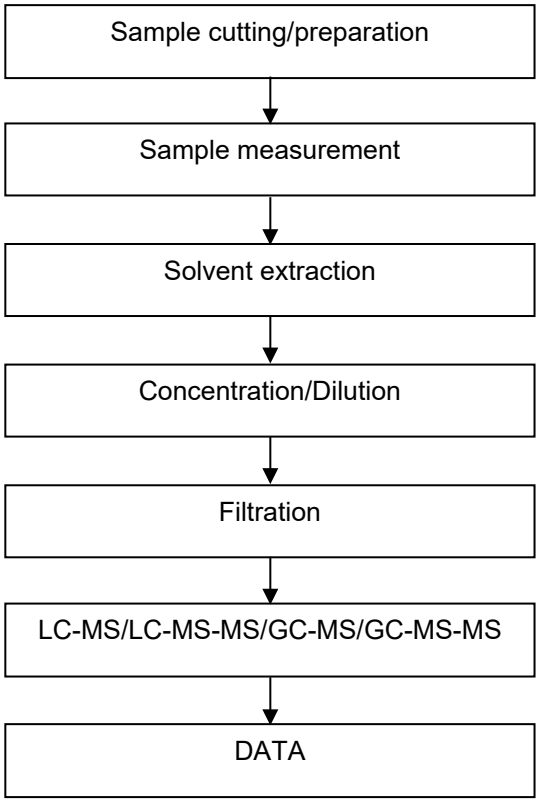
Elements Testing Flow Chart



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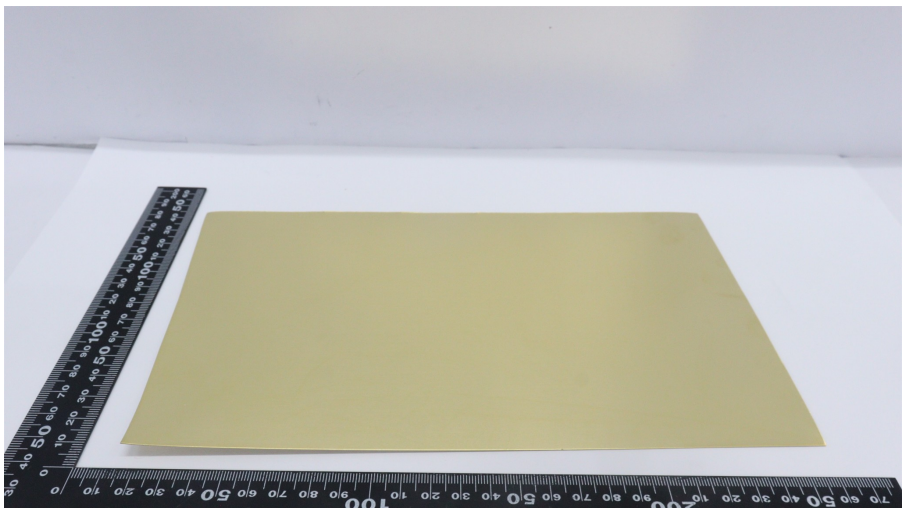
PFASs/ PFOS/PFOA Testing Flow Chart



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Sample Photo:



SHA25-0164434-0001.C004

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检测报告
Test Report

报告编号 A2250431426101001E
Report No. A2250431426101001E

报告抬头公司名称 安徽翊昇表面处理科技有限公司
Company Name shown on Report ANHUI YISHENG SURFACE TREATMENT TECHNOLOGY CO.LTD
地 址 安徽省池州市贵池区皖江西路7号3号厂房
Address BUILDING 3, NO. 7 WANJIANG WEST ROAD, GUICHI DISTRICT, CHIZHOU CITY, ANHUI PROVINCE

以下测试之样品及样品信息由申请者提供并确认
The following sample(s) and sample information was/were submitted and identified by/on the behalf of the applicant

样品名称	镀层镍
Sample Name	Nickel coating
样品型号	批量样品
Model No.	Batch samples
样品颜色	本色
Color	Natural color
材料名称	镀层镍
Material	Nickel coating
样品接收日期	2025.06.20
Sample Received Date	Jun. 20, 2025
样品检测日期	2025.06.20-2025.07.02
Testing Period	Jun. 20, 2025 to Jul. 2, 2025

检测要求 根据客户要求，对所提交样品中的铅(Pb)，镉(Cd)，汞(Hg)，六价铬(Cr(VI))，多溴联苯(PBBs)，多溴二苯醚(PBDEs)，邻苯二甲酸酯(DBP, BBP, DEHP, DIBP)，钴(Co)，铍(Be)，锑(Sb)，氟(F)，氯(Cl)，溴(Br)，碘(I)，全氟辛酸(PFOA)，全氟辛烷磺酸(PFOS)进行测试。

Test Requested As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Cobalt(Co), Beryllium(Be), Antimony(Sb), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Perfluorooctanoic Acid(PFOA), Perfluorooctane Sulfonates(PFOS) in the submitted sample(s).

检测依据/检测结果 请参见下页。
Test Method/Test Result(s) Please refer to the following page(s).

批准
Approved by

陈凯敏
实验室经理 Lab Manager

日 期
Date 2025.07.02

No. R188381286

上海华测品标检测技术有限公司
Centre Testing International Pinbiao(Shanghai) Co., Ltd.
上海市闵行区万芳路1351号
No.1351, Wanfang Road, Minhang District, Shanghai, China

检测报告
Test Report

检测依据 Test Method

测试项目 Test Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅 Lead (Pb)	参考IEC 62321-5:2013 Refer to IEC 62321-5:2013	ICP-OES
镉 Cadmium (Cd)	参考IEC 62321-5:2013 Refer to IEC 62321-5:2013	ICP-OES
汞 Mercury (Hg)	参考IEC 62321-4:2013+AMD1:2017 CSV Refer to IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
六价铬 Hexavalent Chromium (Cr(VI))	IEC 62321-7-1:2015	UV-Vis
多溴联苯 Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
钴 Cobalt(Co)	参考US EPA 3050B:1996 & US EPA 6010D:2018* Refer to US EPA 3050B:1996 & US EPA 6010D:2018*	ICP-OES
铍 Beryllium(Be)	参考US EPA 3050B:1996 & US EPA 6010D:2018* Refer to US EPA 3050B:1996 & US EPA 6010D:2018*	ICP-OES
锑 Antimony(Sb)	参考US EPA 3050B:1996 & US EPA 6010D:2018* Refer to US EPA 3050B:1996 & US EPA 6010D:2018*	ICP-OES
氟 Fluorine (F)	参考EN 14582:2016* Refer to EN 14582:2016*	IC
氯 Chlorine (Cl)	参考EN 14582:2016* Refer to EN 14582:2016*	IC
溴 Bromine (Br)	参考EN 14582:2016* Refer to EN 14582:2016*	IC
碘 Iodine (I)	参考EN 14582:2016* Refer to EN 14582:2016*	IC
全氟辛酸 Perfluorooctanoic Acid(PFOA)	EN 17681-1:2022*	LC-MS-MS
全氟辛烷磺酸 Perfluorooctane Sulfonates(PFOS)	EN 17681-1:2022*	LC-MS-MS

检测报告
Test Report

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	001	
铅 Lead (Pb)	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D. ▼	0.10 μg/cm² (LOQ)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	001	
多溴联苯 Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	001	
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)		
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	5 mg/kg

检测报告
Test Report

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	001	
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)		
邻苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄基酯 Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基)己酯 Di-(2-ethylhexyl phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	001	
钴 Cobalt (Co)	N.D.	2 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	001	
铍 Beryllium (Be)	N.D.	10 mg/kg
锑 Antimony (Sb)	N.D.	10 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	001	
氟 Fluorine (F)	N.D.	1 μg/cm ²
氯 Chlorine (Cl)	N.D.	1 μg/cm ²
溴 Bromine (Br)	N.D.	1 μg/cm ²
碘 Iodine (I)	N.D.	1 μg/cm ²

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	001	
全氟辛酸 Perfluorooctanoic Acid (PFOA)	N.D.	0.5 μg/m²

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	001	
全氟辛烷磺酸 Perfluorooctane Sulfonates (PFOS)	N.D.	0.5 μg/m²

检测报告
Test Report

样品/部位描述 Sample/Part Description

序号 No.	CTI样品ID CTI Sample ID	描述 Description
1	001	银色镀层 Silvery plating

备注: **对于检测铅，镉，汞，钴，铍，锑之样品已消解完全。**

-N.D. = 未检出 (小于方法检出限或定量限)

-mg/kg = ppm = 百万分之一

-LOQ = 定量限，六价铬的定量限为0.10 μg/cm²

-▼六价铬浓度小于0.10 μg/cm²，样品未检出六价铬。由于未获知样品的存储条件和生产日期，样品的六价铬测试结果仅能代表测试时样品含六价铬的状态。

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

-MDL = Method Detection Limit

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

-mg/kg = ppm = parts per million

-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 μg/cm²

-▼ The sample is negative for Cr(VI) − The Cr(VI) concentration is below 0.10 μg/cm²; The coating is considered a non-Cr(VI) based coating. Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

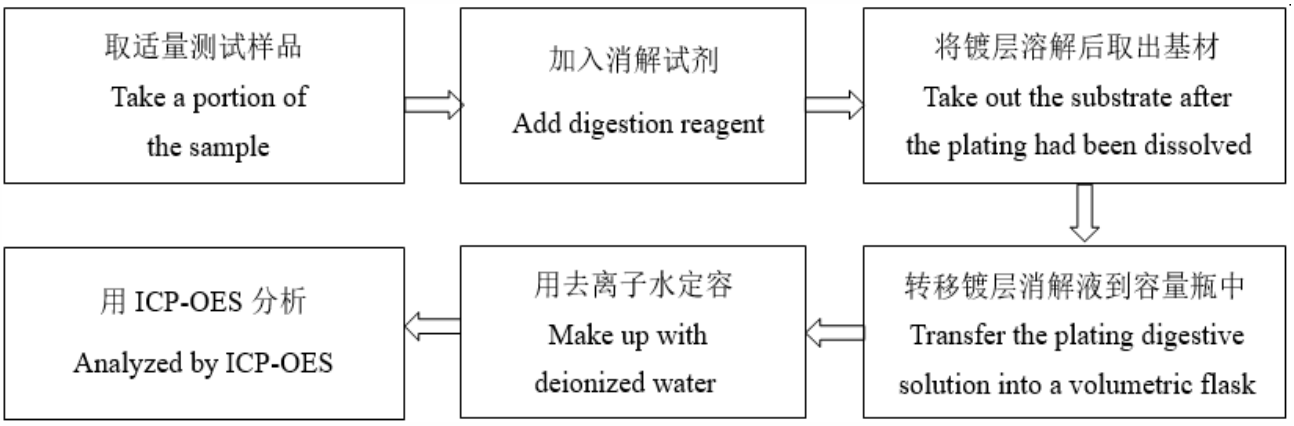
注释: **本报告中的数据结果供科研、教学、企业内部质量控制、企业产品研发等目的用。**
“*”表示该方法不在CNAS认可范围内。

Note: **The testing data and result(s) in this report is(are) just for scientific research, education, internal quality control and product development etc.**
“*”indicates the method(s) is (are) not in CNAS accreditation scope.

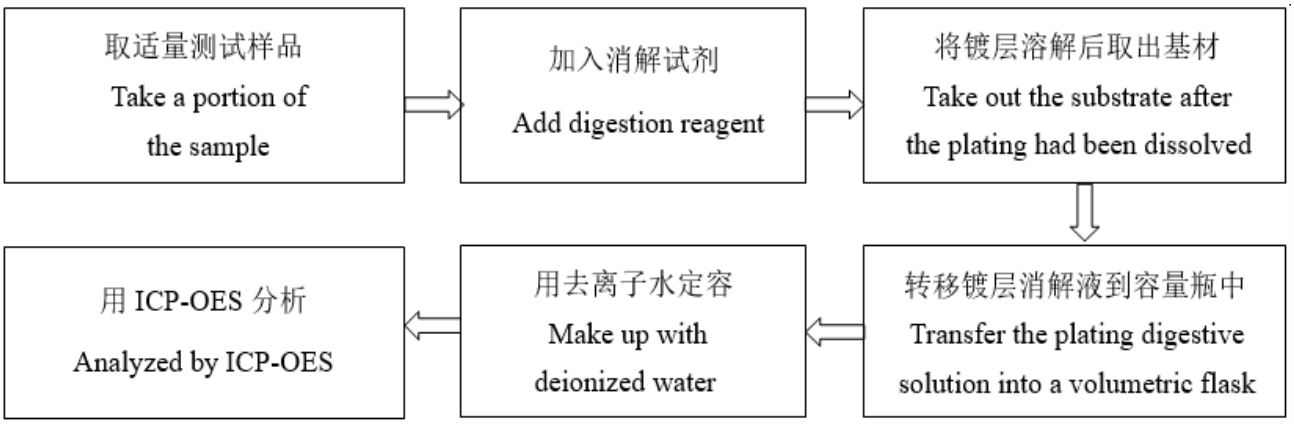
检测报告
Test Report

检测流程 Test Process

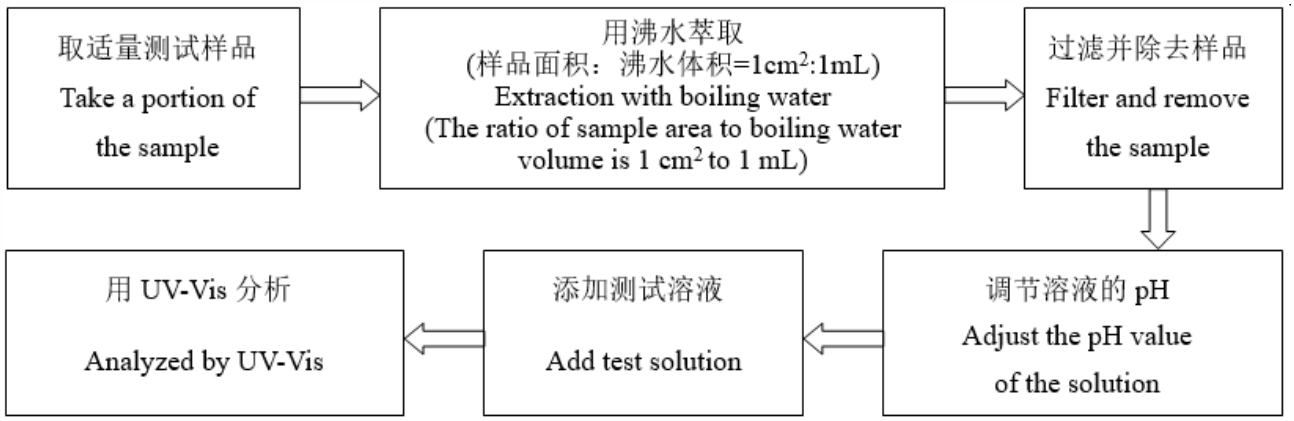
1. 铅(Pb)， 镉(Cd)
Lead (Pb), Cadmium (Cd)



2. 汞(Hg)
Mercury (Hg)

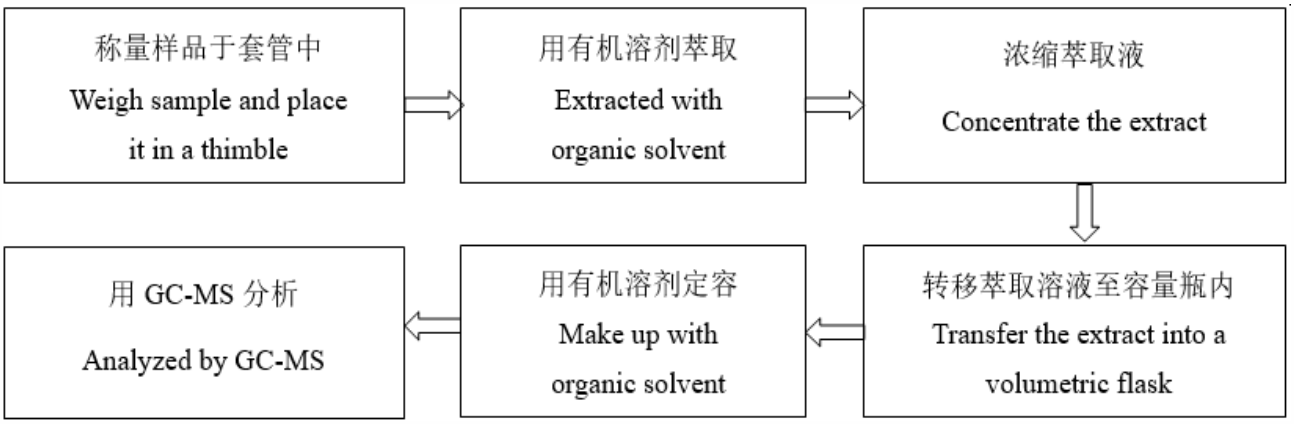


3. 六价铬(Cr(VI))
Hexavalent Chromium (Cr(VI))



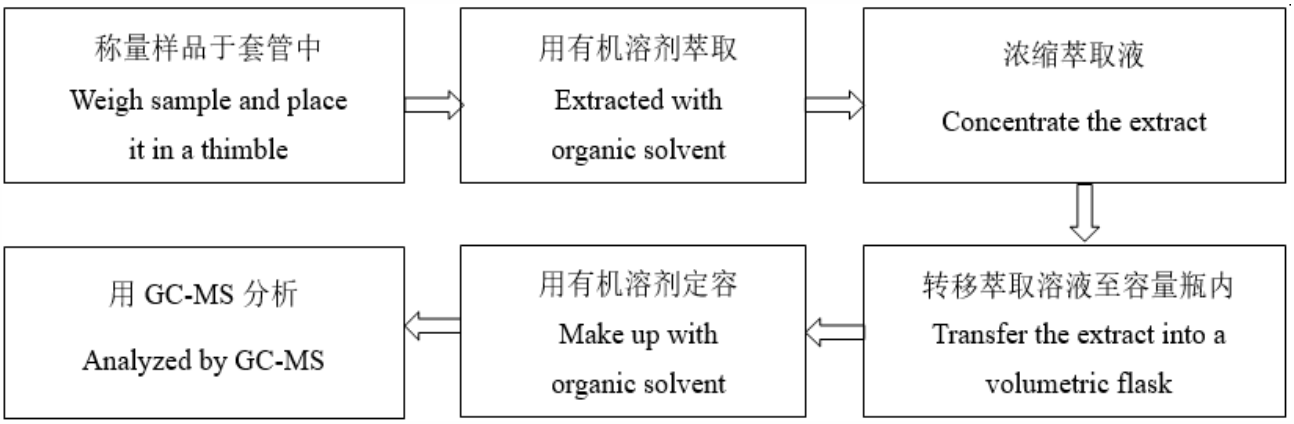
4. 多溴联苯(PBBs)， 多溴二苯醚(PBDEs)

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



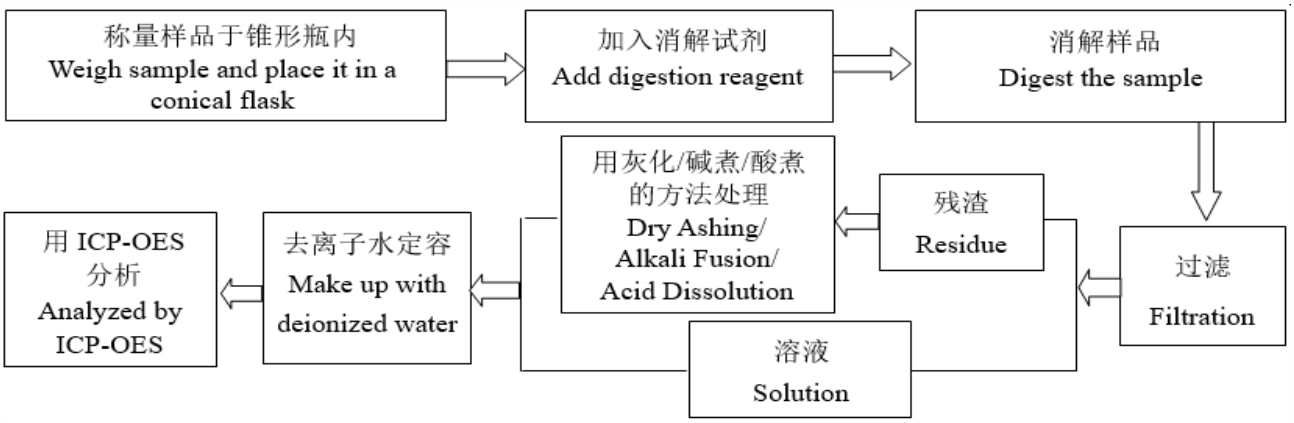
5. 邻苯二甲酸酯(DBP, BBP, DEHP, DIBP)

Phthalates (DBP, BBP, DEHP, DIBP)



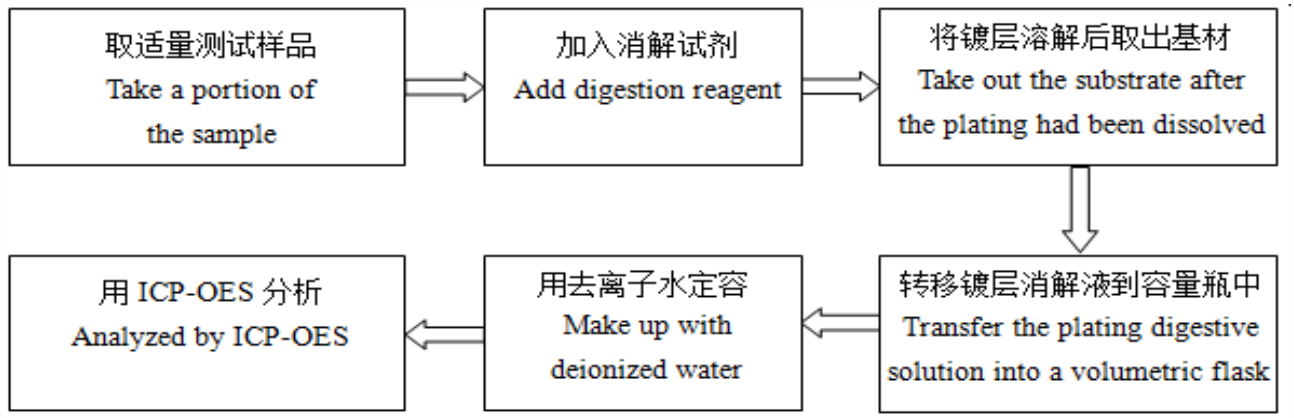
6. 钴(Co)

Cobalt(Co)



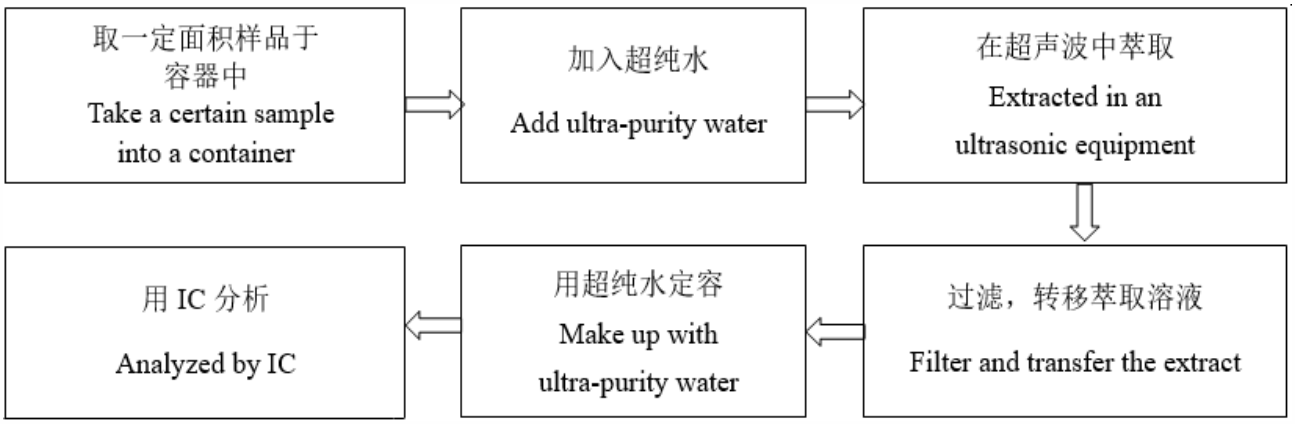
7. 铍(Be)， 锑(Sb)

Beryllium(Be), Antimony(Sb)



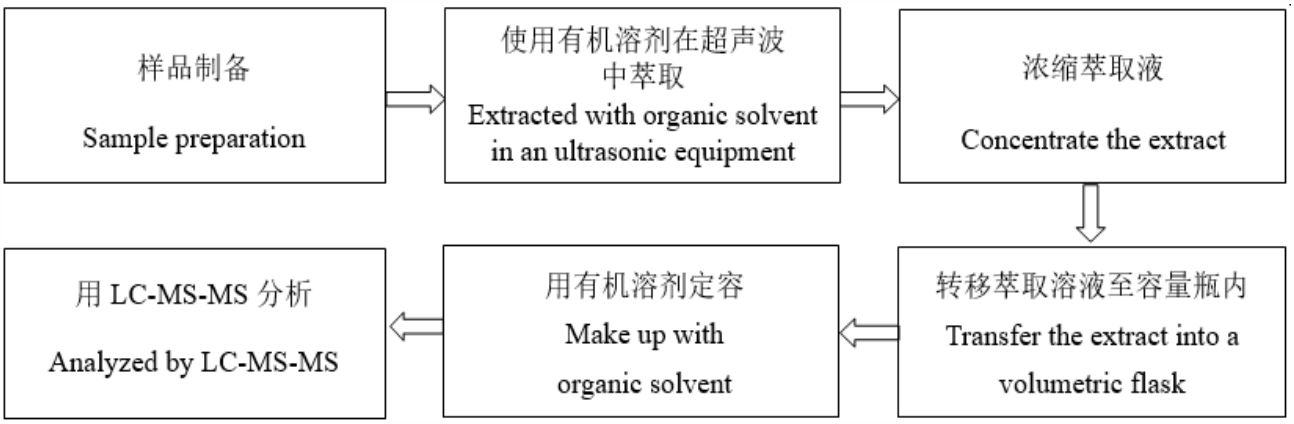
8. 氟(F)， 氯(Cl)， 溴(Br)， 碘(I)

Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)



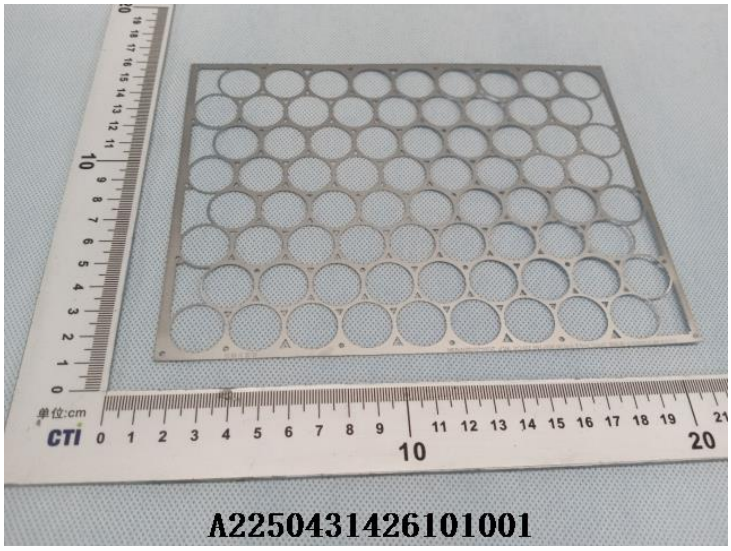
9. 全氟辛酸(PFOA)， 全氟辛烷磺酸(PFOS)

Perfluorooctanoic Acid(PFOA), Perfluorooctane Sulfonates(PFOS)



检测报告
Test Report

样品图片
Photo(s) of the sample(s)



声明Statement：

1. 检测报告无批准人签字、“专用章”及报告骑缝章无效；
   This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. 报告抬头公司名称及地址、样品及样品信息由申请者提供，申请者应对其真实性负责，CTI未核实其真实性；
   The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn’t verified;
3. 本报告检测结果仅对受测样品负责；
   The result(s) shown in this report refer(s) only to the sample(s) tested;
4. 除非另有说明，报告参照ILAC-G8:09/2019 / CNAS-GL015:2022使用简单接受(w=0)二元判定规则进行符合性判定;
   Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019 / CNAS-GL015:2022;
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   Without written approval of CTI, this report can’t be reproduced except in full;
6. 如检测报告中的英文内容与中文内容有差异，以中文为准。
   In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

报告结束

*** End of report ***

检测报告
Test Report

报告编号 A2250431426101005E
Report No. A2250431426101005E

报告抬头公司名称 安徽翊昇表面处理科技有限公司
Company Name shown on Report ANHUI YISHENG SURFACE TREATMENT TECHNOLOGY CO.LTD
地 址 安徽省池州市贵池区皖江西路7号3号厂房
Address BUILDING 3, NO. 7 WANJIANG WEST ROAD, GUICHI DISTRICT, CHIZHOU CITY, ANHUI PROVINCE

以下测试之样品及样品信息由申请者提供并确认
The following sample(s) and sample information was/were submitted and identified by/on the behalf of the applicant

样品名称 Sample Name	镀层雾锡 Tin coating
样品型号 Model No.	批量样品 Batch samples
样品颜色 Color	本色 Natural color
材料名称 Material	镀层雾锡 Tin coating
样品接收日期 Sample Received Date	2025.06.20 Jun. 20, 2025
样品检测日期 Testing Period	2025.06.20-2025.07.02 Jun. 20, 2025 to Jul. 2, 2025

检测要求 根据客户要求，对所提交样品中的铅(Pb)，镉(Cd)，汞(Hg)，六价铬(Cr(VI))，多溴联苯(PBBs)，多溴二苯醚(PBDEs)，邻苯二甲酸酯(DBP, BBP, DEHP, DIBP)，铍(Be)，锑(Sb)，氟(F)，氯(Cl)，溴(Br)，碘(I)，全氟辛酸(PFOA)，全氟辛烷磺酸(PFOS)进行测试。

Test Requested As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Beryllium(Be), Antimony(Sb), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Perfluorooctanoic Acid(PFOA), Perfluorooctane Sulfonates(PFOS) in the submitted sample(s).

检测依据/检测结果 请参见下页。
Test Method/Test Result(s) Please refer to the following page(s).

批准
Approved by

陈凯敏
实验室经理 Lab Manager

日 期
Date 2025.07.02

No. R188381286

上海华测品标检测技术有限公司
Centre Testing International Pinbiao(Shanghai) Co., Ltd.
上海市闵行区万芳路1351号
No.1351, Wanfang Road, Minhang District, Shanghai, China

检测报告
Test Report

检测依据 Test Method

测试项目 Test Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅 Lead (Pb)	IEC 62321-5:2013	ICP-OES
镉 Cadmium (Cd)	IEC 62321-5:2013	ICP-OES
汞 Mercury (Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
六价铬 Hexavalent Chromium (Cr(VI))	IEC 62321-7-1:2015	UV-Vis
多溴联苯 Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
铍 Beryllium(Be)	参考US EPA 3050B:1996 & US EPA 6010D:2018* Refer to US EPA 3050B:1996 & US EPA 6010D:2018*	ICP-OES
锑 Antimony(Sb)	参考US EPA 3050B:1996 & US EPA 6010D:2018* Refer to US EPA 3050B:1996 & US EPA 6010D:2018*	ICP-OES
氟 Fluorine (F)	EN 14582:2016	IC
氯 Chlorine (Cl)	EN 14582:2016	IC
溴 Bromine (Br)	EN 14582:2016	IC
碘 Iodine (I)	EN 14582:2016	IC
全氟辛酸 Perfluorooctanoic Acid(PFOA)	EN 17681-1:2022*	LC-MS-MS
全氟辛烷磺酸 Perfluorooctane Sulfonates(PFOS)	EN 17681-1:2022*	LC-MS-MS

检测报告
Test Report

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	005	
铅 Lead (Pb)	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D. ▼	0.10 μg/cm² (LOQ)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	005	
多溴联苯 Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	005	
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)		
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	5 mg/kg

检测报告
Test Report

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	005	
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)		
邻苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄基酯 Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基)己酯 Di-(2-ethylhexyl phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	005	
铍 Beryllium (Be)	N.D.	10 mg/kg
锑 Antimony (Sb)	N.D.	10 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	005	
氟 Fluorine (F)	N.D.	10 mg/kg
氯 Chlorine (Cl)	N.D.	10 mg/kg
溴 Bromine (Br)	N.D.	10 mg/kg
碘 Iodine (I)	N.D.	10 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	005	
全氟辛酸 Perfluorooctanoic Acid (PFOA)	N.D.	0.01 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	005	
全氟辛烷磺酸 Perfluorooctane Sulfonates (PFOS)	N.D.	0.01 mg/kg

检测报告
Test Report

样品/部位描述 Sample/Part Description

序号 No.	CTI样品ID CTI Sample ID	描述 Description
1	005	银色金属 Silvery metal

备注: **对于检测铅，镉，汞，铍，锑之样品已消解完全。**

-N.D. = 未检出 (小于方法检出限或定量限)

-mg/kg = ppm = 百万分之一

-LOQ = 定量限，六价铬的定量限为0.10 μg/cm²

-▼六价铬浓度小于0.10 μg/cm²，样品未检出六价铬。由于未获知样品的存储条件和生产日期，样品的六价铬测试结果仅能代表测试时样品含六价铬的状态。

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

-MDL = Method Detection Limit

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

-mg/kg = ppm = parts per million

-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 μg/cm²

-▼ The sample is negative for Cr(VI) − The Cr(VI) concentration is below 0.10 μg/cm²; The coating is considered a non-Cr(VI) based coating. Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

注释: **本报告中的数据结果供科研、教学、企业内部质量控制、企业产品研发等目的用。**
“*”表示该方法不在CNAS认可范围内。

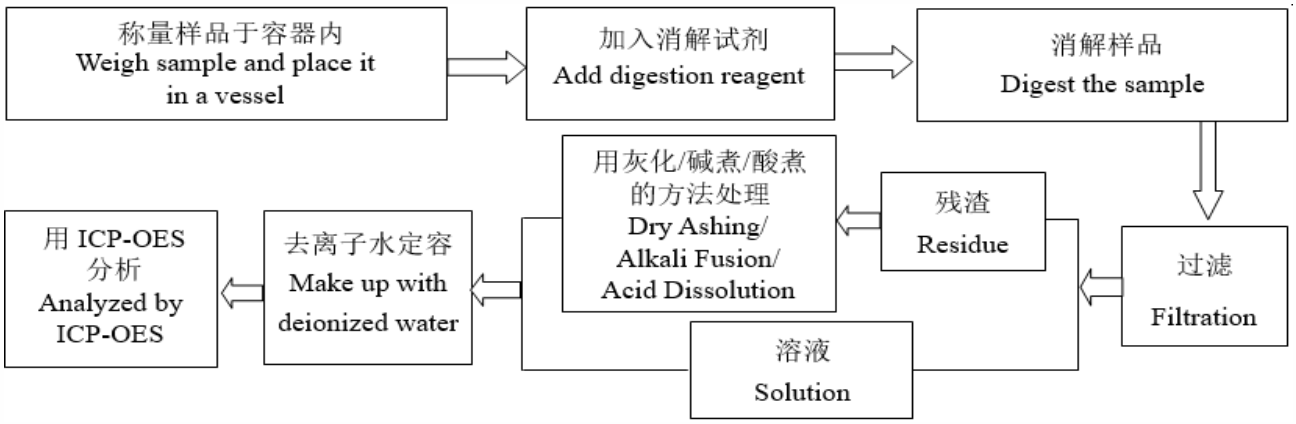
Note: **The testing data and result(s) in this report is(are) just for scientific research, education, internal quality control and product development etc.**
“*”indicates the method(s) is (are) not in CNAS accreditation scope.

检测报告
Test Report

检测流程 Test Process

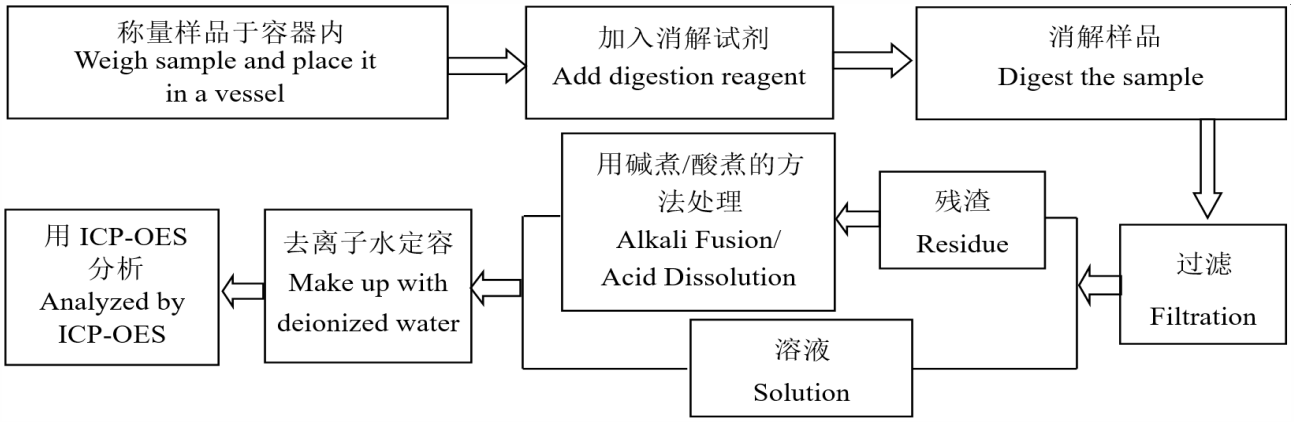
1. 铅(Pb)， 镉(Cd)

Lead (Pb), Cadmium (Cd)



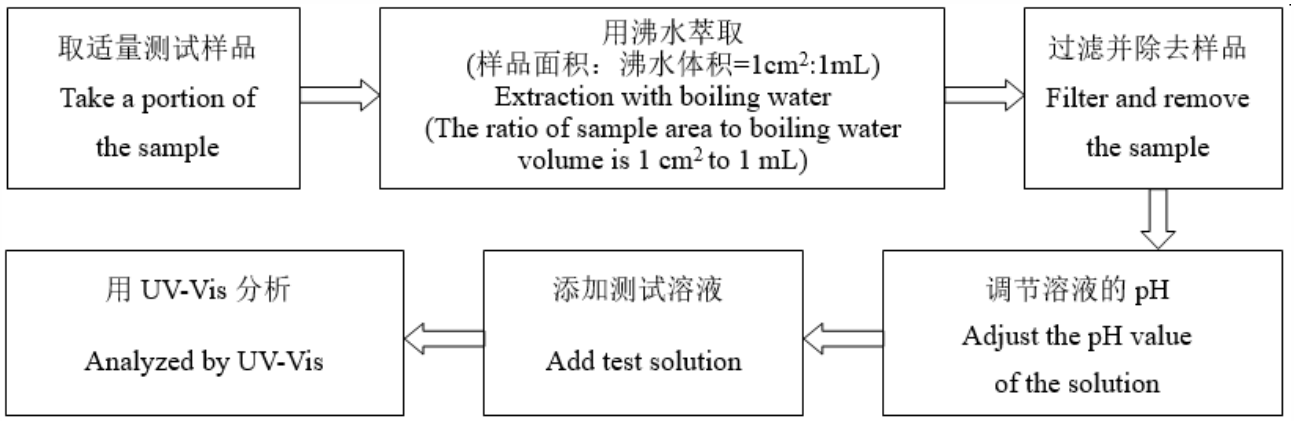
2. 汞(Hg)

Mercury (Hg)



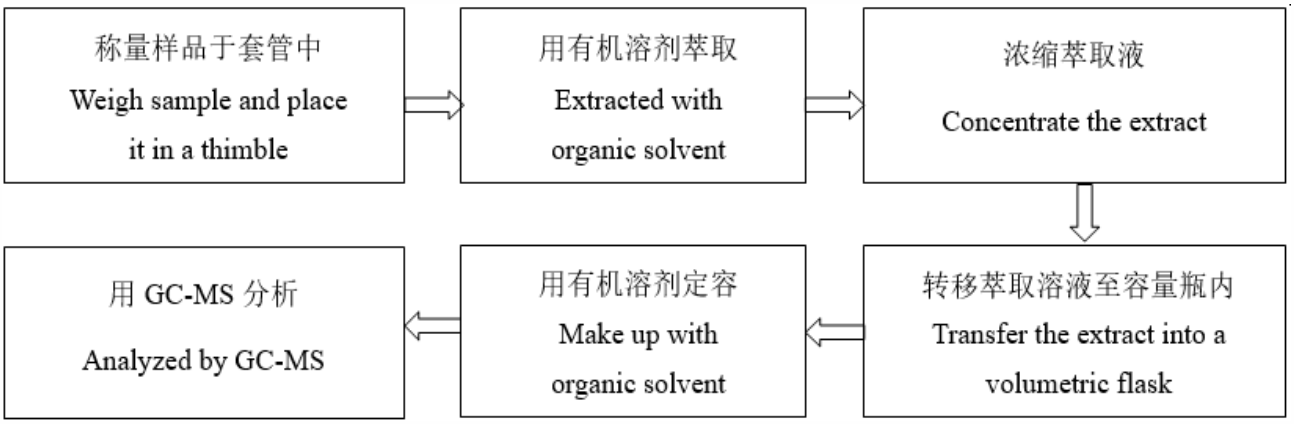
3. 六价铬(Cr(VI))

Hexavalent Chromium (Cr(VI))



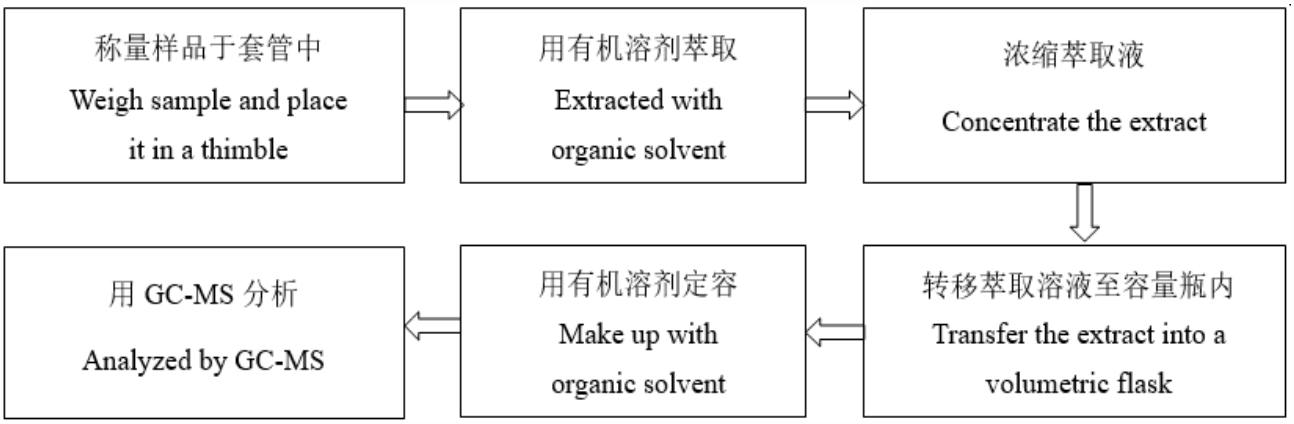
4. 多溴联苯(PBBs)， 多溴二苯醚(PBDEs)

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



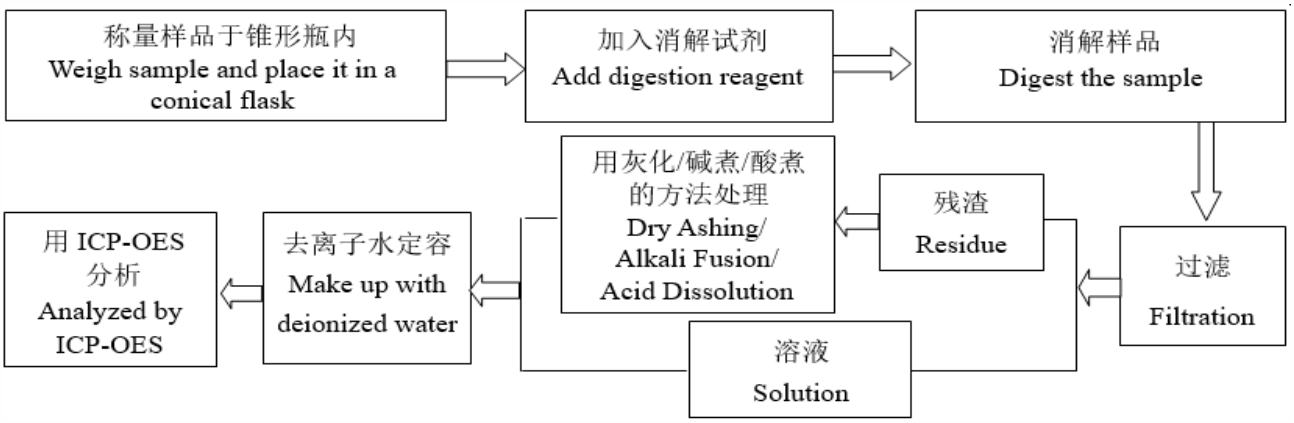
5. 邻苯二甲酸酯(DBP， BBP， DEHP， DIBP)

Phthalates (DBP, BBP, DEHP, DIBP)



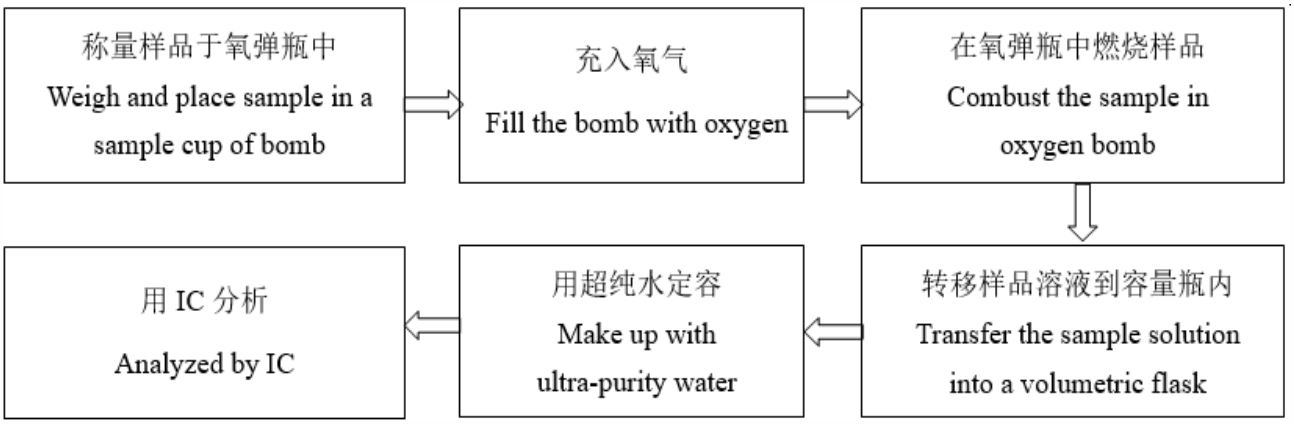
6. 铍(Be)， 锑(Sb)

Beryllium(Be), Antimony(Sb)



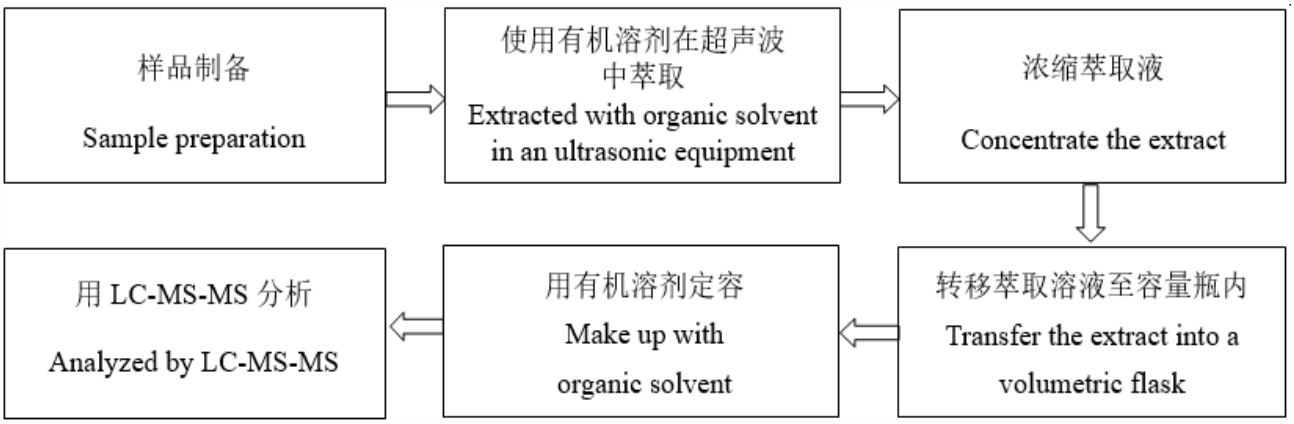
7. 氟(F)， 氯(Cl)， 溴(Br)， 碘(I)

Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)



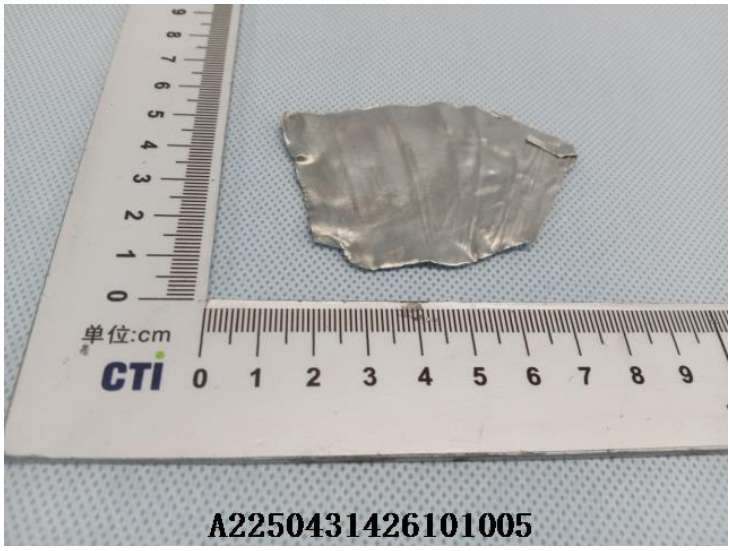
8. 全氟辛酸(PFOA)， 全氟辛烷磺酸(PFOS)

Perfluorooctanoic Acid(PFOA), Perfluorooctane Sulfonates(PFOS)



检测报告
Test Report

样品图片
Photo(s) of the sample(s)



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报告结束

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