

檢測報告 Test Report

報告編號 A2230629927101004E
Report No. A2230629927101004E

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報告抬頭公司名稱 瑞昇金屬工業股份有限公司/南通鈞元電子材料工業有限公司
Company Name REDSUN METAL IND. CO., LTD / NANTONG CHUN-YUAN EDELECTRONICS IND. CO.
shown on Report LTD.
地 址 320030 桃園市中壢區定寧路2號/江蘇省南通市如東縣洋口化學工業園區黃海三路振洋
二路交叉口
Address NO.2, DINGNING RD., ZHONGLI DIST., TAOYUAN CITY 320030 / NANTONG
JU-TUNG HSIEN, YANG KOU CHEMICAL INDUSTRIAL AREA, RUDONG, JIANGSU

以下測試之樣品及樣品資訊由申請者提供並確認

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

樣品名稱	錫膏
Sample Name	SOLDER PASTE
樣品顏色	銀
Color	銀
樣品接收日期	2023.11.30
Sample Received Date	Nov. 30, 2023
樣品檢測日期	2023.11.30-2023.12.07
Testing Period	Nov. 30, 2023 to Dec. 7, 2023

檢測要求

根據客戶要求, 對所提交樣品中的鉛(Pb), 鎘(Cd), 汞(Hg), 六價鉻(Cr(VI)), 多溴聯苯(PBBs), 多溴二苯醚(PBDEs), 鄰苯二甲酸酯(DBP, BBP, DEHP, DIBP), 氟(F), 氯(Cl), 溴(Br), 碘(I), 鄰苯二甲酸酯, 銻(Sb), 鉍(Be), 六溴環十二烷(HBCDD), 全氟辛烷磺酸鹽(PFOS)及其相關物質, 全氟辛酸類(PFOA)相關物質及其鹽進行測試。

Test Requested

As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Phthalates, Antimony (Sb), Beryllium (Be), Hexabromocyclododecane (HBCDD), PFOS and Related Substances, Perfluorooctanoic acid related substances and Its Salts in the submitted sample(s).

檢測依據/檢測結果

Test Method/Test Result(s) 請參見下頁。
Please refer to the following page(s).



徐啟瑞

實驗室經理

Laboratory Manager

日期
Date

2023.12.07

No. R556661258

桃園市蘆竹區南崁路二段9號5樓之6

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結論 Conclusion

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

符合表示檢測結果滿足歐盟RoHS指令2011/65/EU及其修訂指令(EU) 2015/863要求的限值。
PASS means that the results shown on the report comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.

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檢測依據 Test Method

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測試項目 Test Item(s)	測試方法 Test Method	測試儀器 Measured Equipment(s)
鉛 Lead (Pb)	IEC 62321-5:2013	ICP-OES
鎘 Cadmium (Cd)	IEC 62321-5:2013	ICP-OES
汞 Mercury (Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
六價鉻 Hexavalent Chromium (Cr(VI))	IEC 62321-7-2:2017	UV-Vis
多溴聯苯 Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
鄰苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
氟 Fluorine (F)	參考EN 14582:2016 Refer to EN 14582:2016	IC
氯 Chlorine (Cl)	參考EN 14582:2016 Refer to EN 14582:2016	IC
溴 Bromine (Br)	參考EN 14582:2016 Refer to EN 14582:2016	IC
碘 Iodine (I)	參考EN 14582:2016 Refer to EN 14582:2016	IC
鄰苯二甲酸酯 Phthalates	IEC 62321-8:2017	GC-MS
全氟辛烷磺酸及全氟辛酸物質 Perfluorooctane sulfonates and Perfluorooctanoic acid substances (PFOS & PFOA)	參考CEN/TS 15968:2010 Refer to CEN/TS 15968:2010	LC-MS-MS
六溴環十二烷 Hexabromocyclododecane (HBCDD)	IEC 62321-9:2021	GC-MS
銻 Antimony(Sb)	參考US EPA 3050B:1996 & US EPA 6010D:2018 Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP-OES
鈹 Beryllium(Be)	參考US EPA 3050B:1996 & US EPA 6010D:2018 Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP-OES

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檢測結果 Test Result(s)

測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL	限值 Limit
	004		
鉛 Lead (Pb)	932389 mg/kg *#	2 mg/kg	1000 mg/kg
鎘 Cadmium (Cd)	N.D.	2 mg/kg	100 mg/kg
汞 Mercury (Hg)	N.D.	2 mg/kg	1000 mg/kg
六價鉻 Hexavalent Chromium (Cr(VI))	N.D.	8 mg/kg	1000 mg/kg
測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL	限值 Limit
	004		
多溴聯苯 Polybrominated Biphenyls (PBBs)			
一溴聯苯 Monobromobiphenyl	N.D.	5 mg/kg	1000 mg/kg
二溴聯苯 Dibromobiphenyl	N.D.	5 mg/kg	
三溴聯苯 Tribromobiphenyl	N.D.	5 mg/kg	
四溴聯苯 Tetrabromobiphenyl	N.D.	5 mg/kg	
五溴聯苯 Pentabromobiphenyl	N.D.	5 mg/kg	
六溴聯苯 Hexabromobiphenyl	N.D.	5 mg/kg	
七溴聯苯 Heptabromobiphenyl	N.D.	5 mg/kg	
八溴聯苯 Octabromobiphenyl	N.D.	5 mg/kg	
九溴聯苯 Nonabromobiphenyl	N.D.	5 mg/kg	
十溴聯苯 Decabromobiphenyl	N.D.	5 mg/kg	
測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL	限值 Limit
	004		
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)			
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg	1000 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	

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檢測結果 Test Result(s)

測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL	限值 Limit
	004		
鄰苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)			
鄰苯二甲酸丁基苄基酯 Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg	1000 mg/kg
鄰苯二甲酸二(2-乙基)己酯 Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg	1000 mg/kg
鄰苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg	1000 mg/kg
鄰苯二甲酸二異丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg	1000 mg/kg
測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL	
	004		
氟 Fluorine (F)	N.D.	50 mg/kg	
氯 Chlorine (Cl)	N.D.	50 mg/kg	
溴 Bromine (Br)	N.D.	50 mg/kg	
碘 Iodine (I)	N.D.	50 mg/kg	
測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL	
	004		
鄰苯二甲酸酯 Phthalates			
鄰苯二甲酸二己酯 Di-n-hexyl phthalate (DNHP/DHEXP) CAS#:84-75-3	N.D.	50 mg/kg	
鄰苯二甲酸二異癸酯 Di-iso-decyl phthalate (DIDP) CAS#:26761-40-0,68515-49-1	N.D.	50 mg/kg	
鄰苯二甲酸二異壬酯 Di-isononyl phthalate (DINP) CAS#:28553-12-0,68515-48-0	N.D.	50 mg/kg	
鄰苯二甲酸二正辛酯 Di-n-octyl phthalate (DNOP) CAS#:117-84-0	N.D.	50 mg/kg	
鄰苯二甲酸烷基酯(C6-8支型結構,C7富集) 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP) CAS#:71888-89-6	N.D.	50 mg/kg	

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檢測結果 Test Result(s)

鄰苯二甲酸烷基酯(C7-11支型和線性結構) 1,2-Benzenedicarboxylic acid, di-(C7-11)-branched and linear alkyl esters (DHNUP) CAS#:68515-42-4	N.D.		50 mg/kg
鄰苯二甲酸二甲氧基乙酯Bis (2-methoxyethyl) phthalate (DEMP) CAS#:117-82-8	N.D.		50 mg/kg
測試項目 Tested Item(s)	結果 Result		方法檢出限 MDL
	004		
六溴環十二烷 Hexabromocyclododecane (HBCDD)	N.D.		20 mg/kg
測試項目 Tested Item(s)	結果 Result		方法檢出限 MDL
	004		
鈹 Beryllium (Be)	N.D.		2 mg/kg
測試項目 Tested Item(s)	結果 Result		方法檢出限 MDL
	004		
銻 Antimony (Sb)	N.D.		2 mg/kg
測試項目 Tested Item(s)	CAS No.	結果Result	方法檢出限MDL
		004	
全氟辛基磺酸 Perfluorooctanesulfonic acid (PFOS)	1763-23-1	N.D.	0.01 mg/kg
氟蟲胺 N-Ethylperfluoro-1-octanesulfonamide (N-Et-FOSA)	4151-50-2	N.D.	0.05 mg/kg
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟-N-甲基-辛磺醯胺 N-Methylperfluoro-1-octanesulfonamide (N-Me-FOSA)	31506-32-8	N.D.	0.05 mg/kg
N-乙基全氟辛基磺醯胺乙醇 2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol (N-Et-FOSE)	1691-99-2	N.D.	0.05 mg/kg
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟-N-(2-羥乙基)-N-甲基-1-辛基磺醯胺 2-(N-Methylperfluoro-1-octanesulfonamido)-ethanol (N-Me-FOSE)	24448-09-7	N.D.	0.05 mg/kg
全氟辛酸 Perfluorooctanoic Acid (PFOA)	335-67-1	N.D.	0.01 mg/kg
全氟辛烷磺醯胺 Perfluorooctane sulfonamide (PFOSA)	754-91-6	N.D.	0.01 mg/kg

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全氟辛烷磺酸和全氟辛酸清單 List of Perfluorooctanesulfonic acid and Perfluorooctanoic acid

物質名稱Substance Name(s)	CAS No.
全氟辛烷磺酸Perfluorooctanesulfonic acid(PFOS)	
全氟辛烷磺酸鉀 Perfluorooctanesulfonic acid, potassium salt	2795-39-3
全氟辛烷磺酸鋰 Perfluorooctanesulfonic acid, lithium salt	29457-72-5
全氟辛烷磺酸銨 Perfluorooctanesulfonic acid, ammonium salt	29081-56-9
全氟辛烷磺酸二乙醇銨 Perfluorooctane sulfonate diethanolamine salt	70225-14-8
全氟辛烷磺酸四乙基銨 Perfluorooctanesulfonic acid, tetraethylammonium salt	56773-42-3
全氟辛烷磺酸二癸二甲基銨 Didecyl dimethyl ammonium perfluorooctane sulfonate	251099-16-8
全氟辛烷磺酰氟 Perfluoro-1-octanesulfonyl fluoride	307-35-7
全氟辛烷磺酸鈉 Sodium perfluorooctane sulfonate	4021-47-0
全氟辛烷磺酸鎂 1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-, magnesium salt (2:1)	91036-71-4
全氟辛基磺酸哌啶 Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8 heptafluorooctanesulfonate	71463-74-6
全氟辛酸Perfluorooctanoic acid(PFOA)	
全氟辛酸銨 Ammonium pentafluorooctanoate	3825-26-1
全氟辛酸鈉 Sodium perfluorooctanoate	335-95-5
全氟辛酸鉀 Potassium perfluorooctanoate	2395-00-8
全氟辛酸銀 Silver perfluorooctanoate	335-93-3
全氟辛氟 Perfluorooctanoyl fluoride	335-66-0

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樣品/部位描述 Sample/Part Description

序號 No.	CTI樣品ID CTI Sample ID	描述 Description
1	004	灰色膏物(乾重) Gray paste(dry weight)

備註: 對於檢測鉛, 鎘, 汞, 鉍, 銻之樣品已消解完全。

-N.D. = 未檢出 (小於方法檢出限或定量限)

-mg/kg = ppm = 百萬分之一

-1000 mg/kg = 0.1%

-*=測試結果僅供參考。

-#=根據客戶聲明, 樣品涉及歐盟RoHS指令2011/65/EU豁免項第7(a) 條: 高溫熔融焊料中的鉛 (即: 鉛基合金中鉛含量 $\geq 85\%$ (Wt))。

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

-1000 mg/kg = 0.1%

-*=Testing results are only used for reference.

-#=According to the client's statement, the material of the sample(s) fall into exemption item 7(a) according to EU Directive 2011/65/EU: Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).

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

Note: **The testing data and result(s) in this report is(are) just for scientific research, education, internal quality control and product development etc.**

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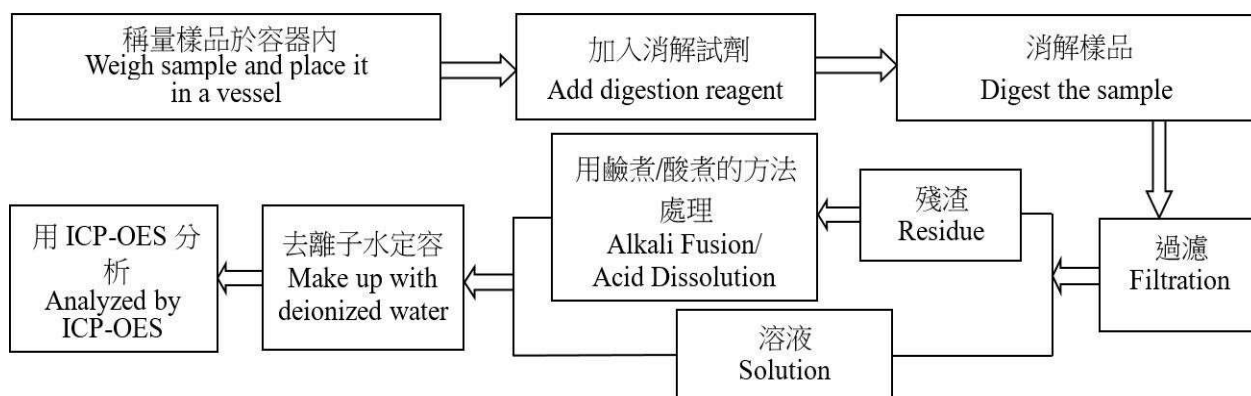
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檢測流程 Test Process

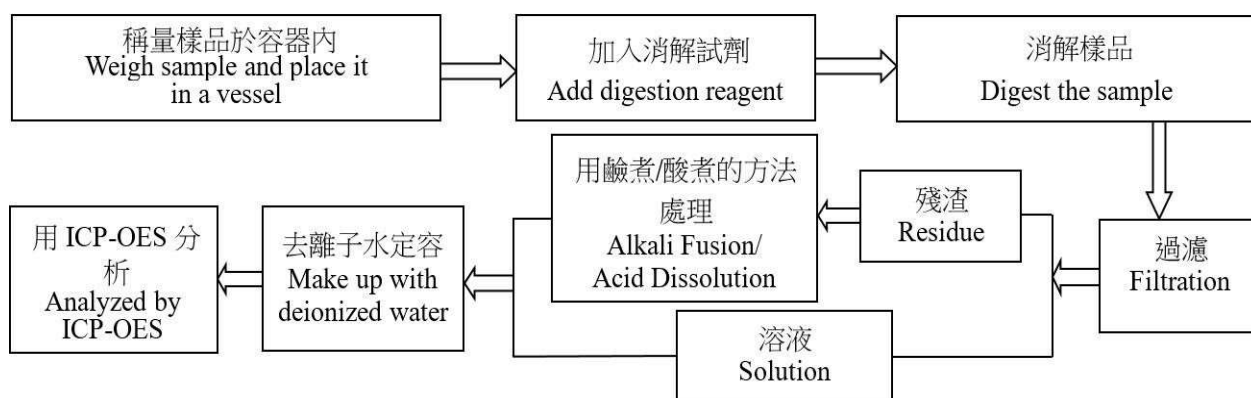
1. 鉛(Pb)， 鎘(Cd)

Lead (Pb), Cadmium (Cd)



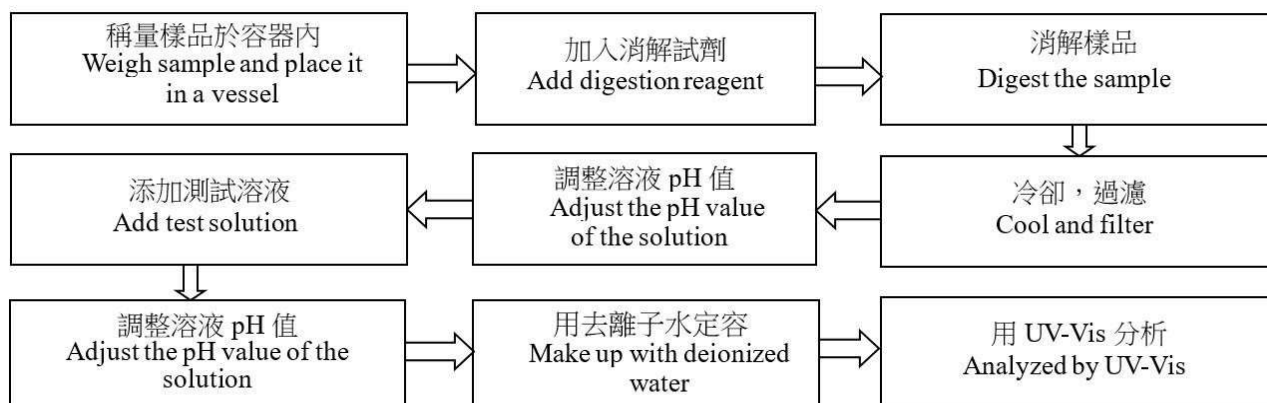
2. 汞(Hg)

Mercury (Hg)



3. 六價鉻(Cr(VI))

Hexavalent Chromium (Cr(VI))



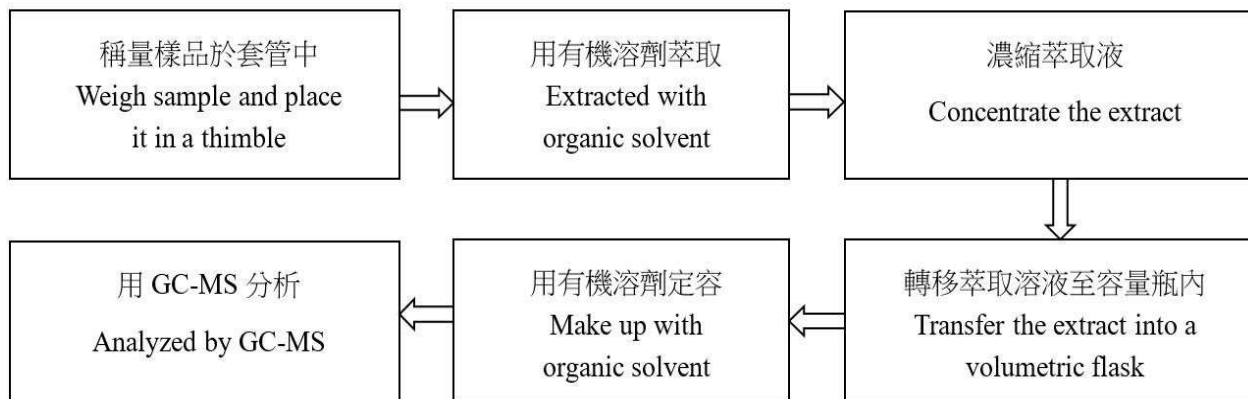
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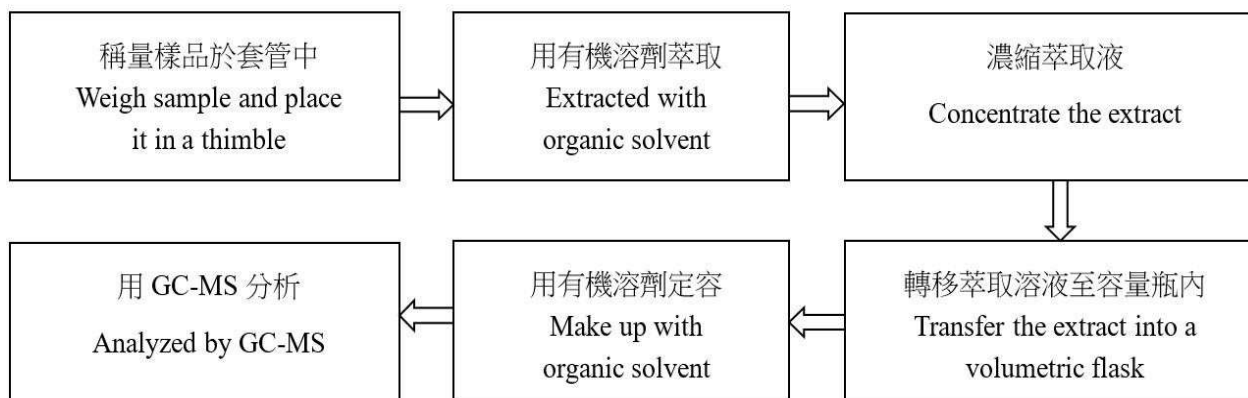
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4. 多溴聯苯(PBBs), 多溴二苯醚(PBDEs)

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

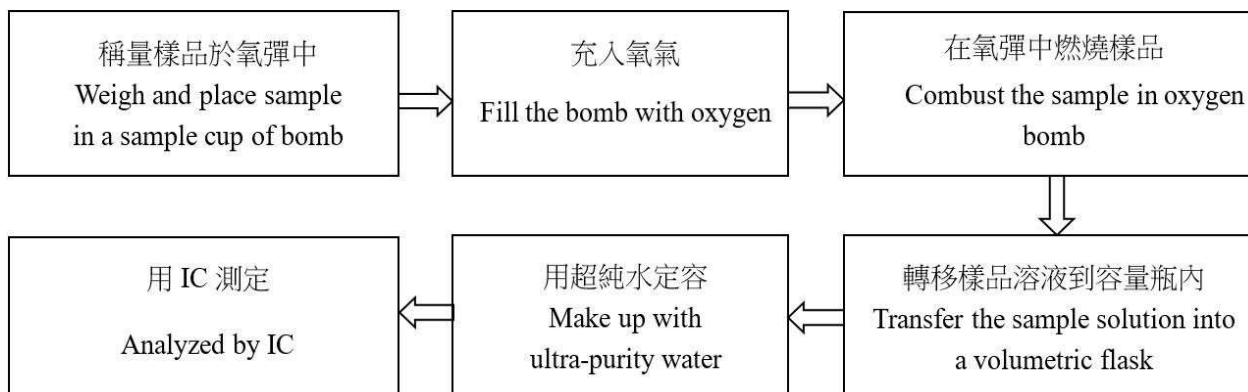


5. 鄰苯二甲酸酯(DBP, BBP, DEHP, DIBP), 鄰苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP), Phthalates



6. 氟(F), 氯(Cl), 溴(Br), 碘(I)

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

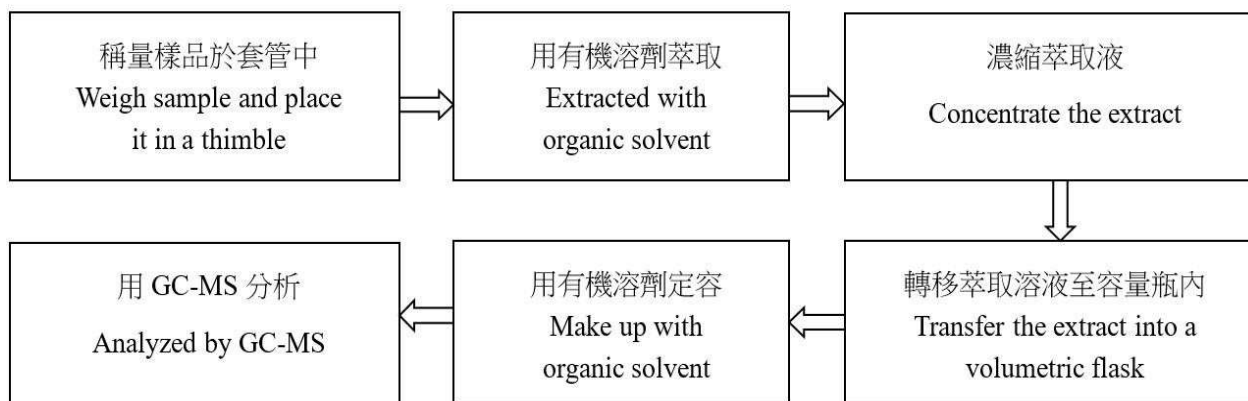


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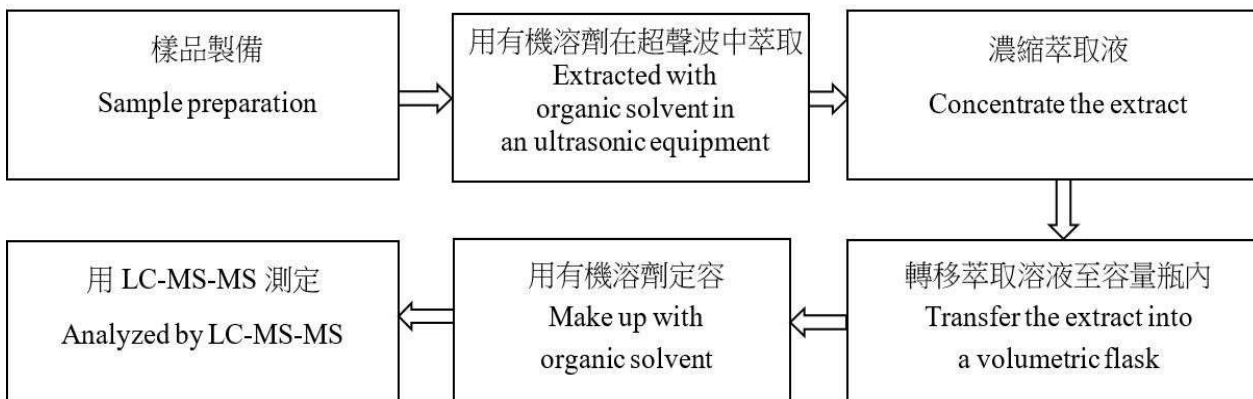
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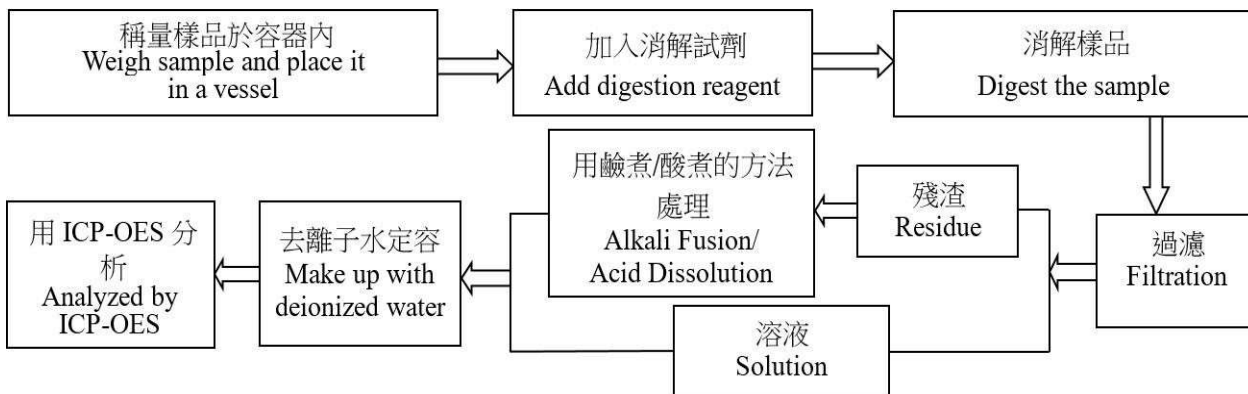
7. 六溴環十二烷 (HBCDD) Hexabromocyclododecane (HBCDD)



8. 全氟辛烷磺酸鹽(PFOS)及其相關物質，全氟辛酸類(PFOA)相關物質及其鹽 PFOS and Related Substances, Perfluorooctanoic acid related substances and Its Salts



9. 銻 (Sb)，鈹 (Be) Antimony(Sb), Beryllium(Be)



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樣品圖片 Photo(s) of the sample(s)



聲明Statement：

1. 檢測報告無批准人簽字、“專用章”及報告騎縫章無效；
This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. 報告抬頭公司名稱及位址、樣品及樣品資訊由申請者提供，申請者應對其真實性負責，CTI未核實其真實性；
The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. 本報告檢測結果僅對受測樣品負責；
The result(s) shown in this report refer(s) only to the sample(s) tested;
4. 未經CTI書面同意，不得部分複製本報告；
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In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

報告結束
*** End of report ***

附錄Appendix

客戶參考資訊Client Reference Information

B280P3202J, B280P3202-8-1, B280P3202G-11, B280J8882A, B280J8882C, B280M3202J, B280J8882G2, B280J8882G3, B280J8882G4, B280J8882P, B280JPIN6G, P280MJ882L, P280MJ202L, P280MJ882P, P280J202M, S280MJ882M, S280MJ202L, S280J202L, NCY-40-280, B280P32590, SH925N-5N, SH925N-8-1N, PH925N-9K...等B280系列

聲明Statement:

1. 附錄內容由申請者提供，申請者應對其真實性負責，CTI未核實其真實性。
The Appendix Information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.
2. 附錄內容為A2230629927101004E報告的補充。
The Appendix Information is/are the supplement(s) for the Report A2230629927101004E.