Test Report 測試報告

Number 報告號碼 : TWNC01231256

Applicant: 申請廠商
TA-I TECHNOLOGY CO., LTD.
大毅科技股份有限公司
No. 4, Ln. 17, Sec. 3, Nanshan Rd.,
Luzhu District, Taoyuan City 338,
Taiwan
桃園市蘆竹區南山路三段 17 巷 4 號

Issue Date 報告發行日期 : Dec 22, 2023

Sample Description 樣品敘述:

One (1) Group of Submitted Samples Said To Be :
以下測試樣品乃供應商所提供及確認:

Sample Description 樣品名稱 : LOW CAPACITANCE MAX GUARD ESD SUPPRESSOR

Style / Item No. 產品型號 : MS04/MS06; GS04/GS06 Series

Date Sample Received 收件日期 : Dec 13, 2023

Date Test Started 開始測試日期 : Dec 13, 2023

Test Conducted 測試執行:

As requested by the applicant, for details please refer to attached pages.
依申請商之要求, 細節請參考附頁.

Authorized By:
On behalf of Intertek Testing Services Taiwan Limited

Matt Wang
General Manager

Signed by:

Thomas Chou
Manager

報告查詢 Report Verification

Intertek Testing Services Taiwan Ltd.
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Test Conducted 測試內容：

1. Chemical Test Result 化學測試結果

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果	MDL
			Mixed all kinds of submitted samples(#)	
Heavy Metal 重金屬				
Cadmium (Cd) Content 鎘含量	ppm	With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. 參考 IEC 62321-5: 2013，以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	2
Lead (Pb) Content 鉛含量	ppm	With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. 參考 IEC 62321-5: 2013，以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	2
Mercury (Hg) Content 汞含量	ppm	With reference to IEC 62321-4:2013+AMD1:2017, by microwave or acid digestion and determined by ICP-OES. 參考 IEC 62321-4:2013+AMD1:2017，以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	2
Arsenic (As) Content 砷含量	ppm	With reference to USEPA 3052, by microwave digestion and determined by ICP-OES. 參考 USEPA 3052，以微波消化法並用感應耦合電漿原子發射光譜儀分析。	ND	2
Beryllium (Be) Content 鈹含量	ppm	With reference to USEPA 3052, by microwave digestion and determined by ICP-OES. 參考 USEPA 3052，以微波消化法並用感應耦合電漿原子發射光譜儀分析。	ND	2
Antimony (Sb) Content 銻含量	ppm	With reference to USEPA 3052, by microwave digestion and determined by ICP-OES. 參考 USEPA 3052，以微波消化法並用感應耦合電漿原子發射光譜儀分析。	ND	2

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			Mixed all kinds of submitted samples(#)	
Heavy Metal 重金屬				
Chromium VI (Cr(VI)) Content 六價鉻含量	ppm	With reference to IEC 62321-7-2: 2017, organic solvent was used to dissolve or swell sample matrix, followed by alkaline digestion and determined by UV-Vis Spectrophotometer. 參考 IEC 62321-7-2:2017，以有機溶劑溶解或使樣品基質膨脹，再進行鹼液消化，用紫外光-可見光分光光度計分析。	ND	8
Polybrominated Biphenyls (PBBs) 多溴聯苯				
Monobrominated Biphenyls (MonoBB) 單溴聯苯	ppm	With reference to IEC 62321-6: 2015, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary. 參考 IEC 62321-6: 2015，以溶劑萃取並用氣相層析質譜儀分析，必要時會以高效液相層析儀光二極體陣列偵測儀進行確認。	ND	5
Dibrominated Biphenyls (DiBB) 二溴聯苯	ppm		ND	5
Tribrominated Biphenyls (TriBB) 三溴聯苯	ppm		ND	5
Tetrabrominated Biphenyls (TetraBB) 四溴聯苯	ppm		ND	5
Pentabrominated Biphenyls (PentaBB) 五溴聯苯	ppm		ND	5
Hexabrominated Biphenyls (HexaBB) 六溴聯苯	ppm		ND	5
Heptabrominated Biphenyls (HeptaBB) 七溴聯苯	ppm		ND	5
Octabrominated Biphenyls (OctaBB) 八溴聯苯	ppm		ND	5
Nonabrominated Biphenyls (NonaBB) 九溴聯苯	ppm		ND	5
Decabrominated Biphenyl (DecaBB) 十溴聯苯	ppm		ND	5

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Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果	MDL
			Mixed all kinds of submitted samples(#)	
Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚				
Monobrominated Diphenyl Ethers (MonoBDE) 單溴聯苯醚	ppm	With reference to IEC 62321-6: 2015, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary. 參考 IEC 62321-6: 2015，以溶劑萃取並用氣相層析質譜儀分析，必要時會以高效液相層析儀光二極體陣列偵測儀進行確認。	ND	5
Dibrominated Diphenyl Ethers (DiBDE) 二溴聯苯醚	ppm		ND	5
Tribrominated Diphenyl Ethers (TriBDE) 三溴聯苯醚	ppm		ND	5
Tetrabrominated Diphenyl Ethers (TetraBDE) 四溴聯苯醚	ppm		ND	5
Pentabrominated Diphenyl Ethers (PentaBDE) 五溴聯苯醚	ppm		ND	5
Hexabrominated Diphenyl Ethers (HexaBDE) 六溴聯苯醚	ppm		ND	5
Heptabrominated Diphenyl Ethers (HeptaBDE) 七溴聯苯醚	ppm		ND	5
Octabrominated Diphenyl Ethers (OctaBDE) 八溴聯苯醚	ppm		ND	5
Nonabrominated Diphenyl Ethers (NonaBDE) 九溴聯苯醚	ppm		ND	5
Decabrominated Diphenyl Ether (DecaBDE) 十溴聯苯醚	ppm		ND	5
Phthalates 鄰苯二甲酸酯				
Di(2-ethylhexyl) Phthalate (DEHP) 鄰苯二甲酸二(2-乙基己基)酯	ppm	With reference to IEC 62321-8:2017, by solvent extraction and determined by GC-MS. 參考 IEC 62321-8:2017，以溶劑萃取並用氣相層析質譜儀分析。	ND	50
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	ppm		ND	50
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	ppm		ND	50
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	ppm		ND	50
Di-(Iso-Nonyl) Phthalate (DINP) 鄰苯二甲酸二異壬酯	ppm		ND	50
Di-(Iso-Decyl) Phthalate (DIDP) 鄰苯二甲酸二異癸酯	ppm		ND	50
Di-(N-Octyl) Phthalate (DNOP) 鄰苯二甲酸二辛酯	ppm		ND	50
Di-n-hexyl Phthalate (DNHP) 鄰苯二甲酸二正己酯	ppm		ND	50

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1. Chemical Test Result 化學測試結果

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果	MDL
			Mixed all kinds of submitted samples(#)	
Halogen Content 鹵素含量				
Fluorine (F) 氟	ppm	With reference to EN 14582:2016 by combustion bomb with oxygen and determined by Ion Chromatography. 參考 EN 14582:2016，以氧彈燃燒集氣法並用離子層析儀分析。	ND	50
Chlorine (Cl) 氯	ppm		ND	50
Bromine (Br) 溴	ppm		ND	50
Iodine (I) 碘	ppm		ND	50
Others 其他				
Medium Chain Chlorinated Paraffins (C14~C17) 中鏈氯化石蠟	ppm	With reference to ISO 18219, by solvent extraction and determined by GC-ECNI-MS. 參考 ISO 18219，以溶劑萃取並用氣相層析-化學游離質譜儀分析。	ND	5
Hexabromocyclododecane (HBCDD) 六溴環十二烷	ppm	With reference to USEPA 3540C, by solvent extraction and determined by GC-MS. 參考 USEPA 3540C，以溶劑萃取並用氣相層析質譜儀分析。	ND	10
Perfluorooctane Sulfonates Including PFOS, PFOSA, N-Me-FOSA, N-Et-FOSA, N-Me-FOSE, N-Et-FOSE 全氟辛磺酸含 PFOS, PFOSA, N-Me-FOSA, N-Et-FOSA, N-Me-FOSE, N-Et-FOSE	ppm	With reference to CEN/TS 15968:2010, by solvent extraction and determined by LC-MS-MS. 參考 CEN/TS 15968:2010，以溶劑萃取並用液相層析串聯質譜儀分析。	ND	0.01
Perfluorooctanoic Acid (PFOA) 全氟辛酸	ppm	With reference to CEN/TS 15968:2010, by solvent extraction and determined by LC-MS-MS. 參考 CEN/TS 15968:2010，以溶劑萃取並用液相層析串聯質譜儀分析。	ND	0.01
Tetrabromo bisphenol A (TBBPA) 四溴雙酚-A	ppm	With reference to USEPA 3540C, by solvent extraction and determined by GC-MS. 參考 USEPA 3540C，以溶劑萃取並用氣相層析質譜儀分析。	ND	20

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Test Conducted 測試內容：

1. Chemical Test Result 化學測試結果

Test Item 測試項目	Unit 單位	Test Method 測試方法	Result 結果 GS06	MDL
Polyvinyl Chloride (PVC) 聚氯乙烯	NA	By Beilstein's test (Flame Test) and FT-IR analysis. 以火焰法及傅立葉轉換紅外線光譜儀檢測。	Negative	NA

Remarks: 備註
- ppm = Parts per million based on weight of tested sample = mg/kg 百萬分之一，依據測試樣品重量計算 = 毫克/公斤
- ND = Not detected 未檢測出
- MDL = Quantitation limit of test method 方法偵測極限
- NA = Not applicable 不適用
- # = Test results were for reference only and might not represent the real content in each component as the composite sampling procedure was according to the special request of client. Please be noted the fewer components are mixed up, the better representation of sampling will get.
  依據客戶要求進行混合測試，故本測試結果僅供參考，且該混測結果不一定能代表各分測結果。請注意混測數量越少，各樣品取樣代表性會越佳。

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

Date Sample Received 樣品收件日期 : Dec 13, 2023
Test Period 樣品測試期間 : Dec 13, 2023 to Dec 20, 2023

RoHS Limit RoHS 限值

Restricted Substances 限用物質	Limits 限值
Cadmium (Cd) content 鎘含量	0.01% (100ppm)
Lead (Pb) content 鉛含量	0.1% (1000ppm)
Mercury (Hg) content 汞含量	0.1% (1000ppm)
Chromium VI (Cr(VI)) content 六價鉻含量	0.1% (1000ppm)
Polybrominated Biphenyls (PBBs) 多溴聯苯	0.1% (1000ppm)
Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚	0.1% (1000ppm)
Di(2-ethylhexyl) Phthalate (DEHP) 鄰苯二甲酸二(2-乙基己基)酯	0.1% (1000ppm)
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	0.1% (1000ppm)
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	0.1% (1000ppm)
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	0.1% (1000ppm)

The limits were quoted from Annex II of 2011/65/EU and Amendment (EU) 2015/863 for homogeneous material.
本限值是依據歐盟指令 2011/65/EU 及其更新指令(EU) 2015/863 之附錄二針對均質材質所訂定。

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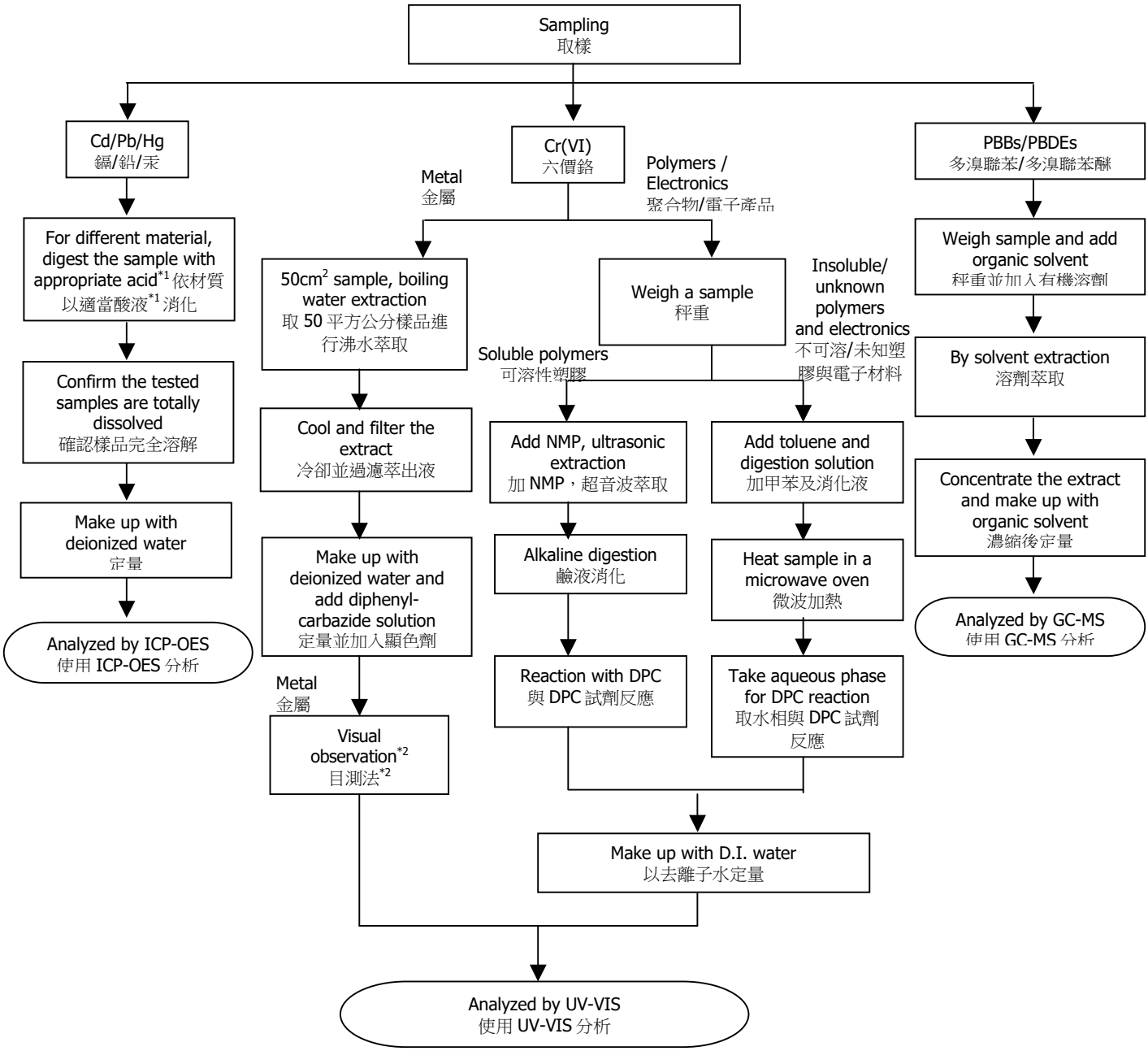
Test Conducted 測試內容：

1. Chemical Test Result 化學測試結果

Measurement Flowchart 測試流程圖:

Test for Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Content RoHS 六項測試
Reference Method 參考方法：Cd/Pb: IEC 62321-5:2013; Hg: IEC 62321-4:2013+AMD1:2017;
Chromium (VI): IEC 62321-7-1:2015 (boiling water extraction);
Chromium (VI): IEC 62321-7-2:2017 (solvent and alkaline extraction);
PBBs/PBDEs: IEC 62321-6:2015



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1. Chemical Test Result 化學測試結果

Remarks 備註:

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

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

*2: If sample solution is significantly more intense than 0.13 μg/cm^2 equivalent comparison standard, Chromium VI would be determined as detected, the result of visual observation is positive.
當待測樣品溶液顏色明顯比 0.13 μg/cm^2 深，採用目測法判定六價鉻結果為陽性。

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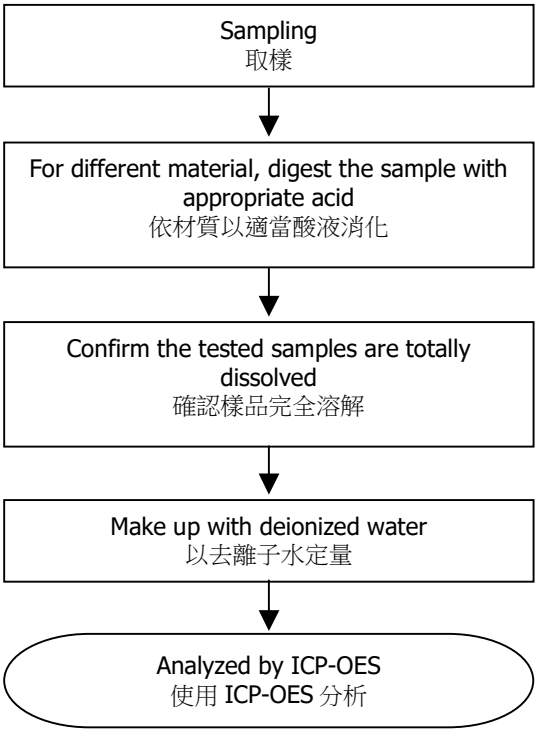
Measurement Flowchart 測試流程圖:

Test for Heavy Metal (As,Sb,Be) Contents 重金屬(砷,銻,鈹)
Reference Method 參考方法：USEPA 3052



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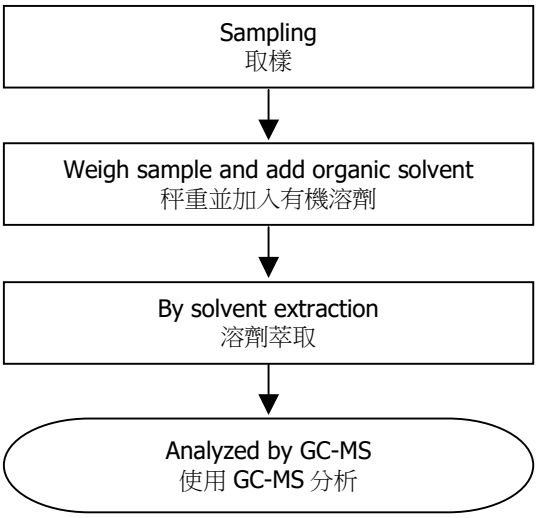
Measurement Flowchart 測試流程圖:

Test for Phthalates Content 鄰苯二甲酸酯測試
Reference Method 參考方法：IEC 62321-8:2017



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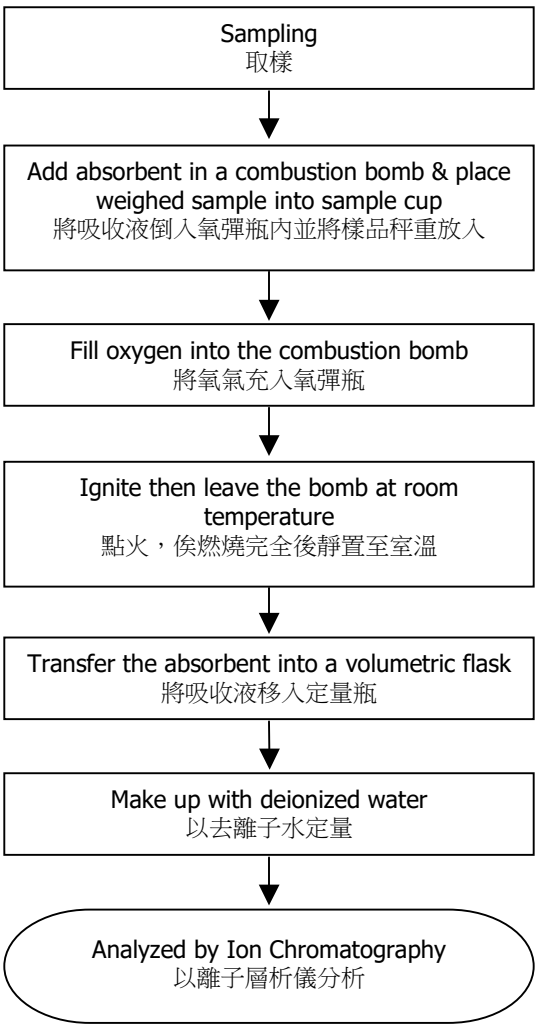
Measurement Flowchart 測試流程圖:

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



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Test Conducted 測試內容：

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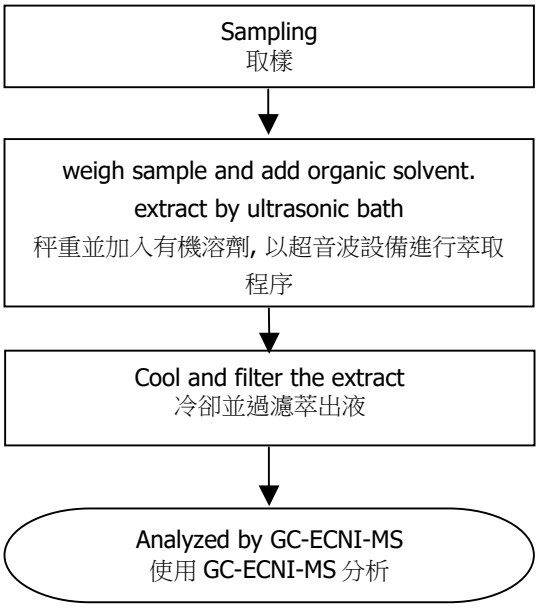
Measurement Flowchart 測試流程圖:

Test for Medium Chain Chlorinated Paraffins (C14~C17) 中鏈氯化石蠟測試流程圖
Reference Method 參考方法：ISO 18219



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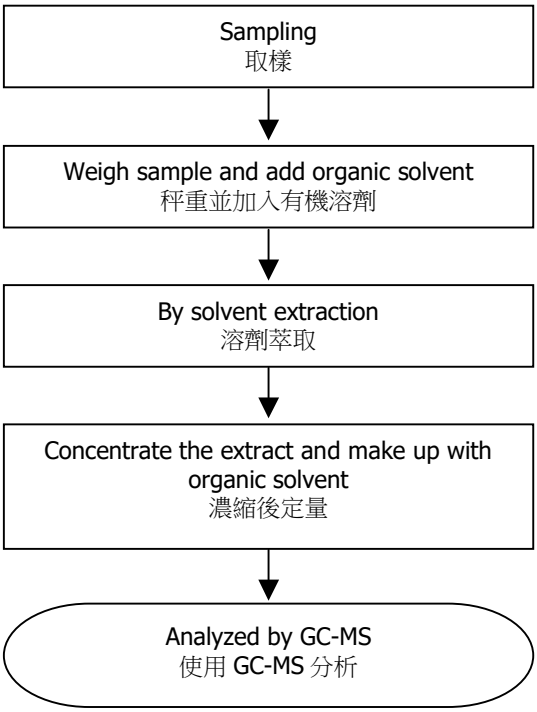
Measurement Flowchart 測試流程圖:

Test for Hexabromocyclododecane (HBCDD) 六溴環十二烷測試
Reference Method 參考方法：USEPA 3540C



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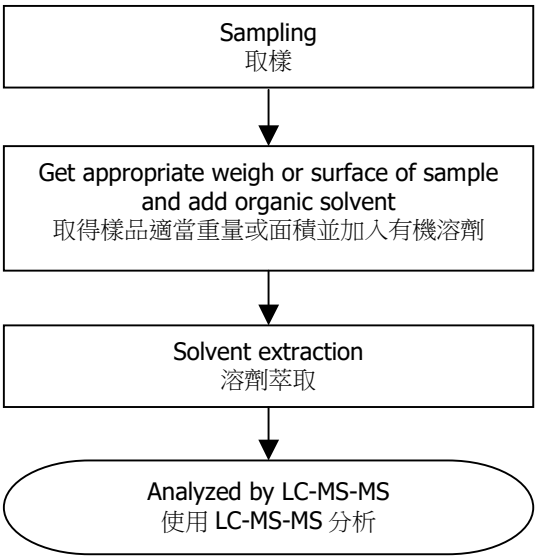
Test Conducted 測試內容：

1. Chemical Test Result 化學測試結果

Measurement Flowchart 測試流程圖:

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



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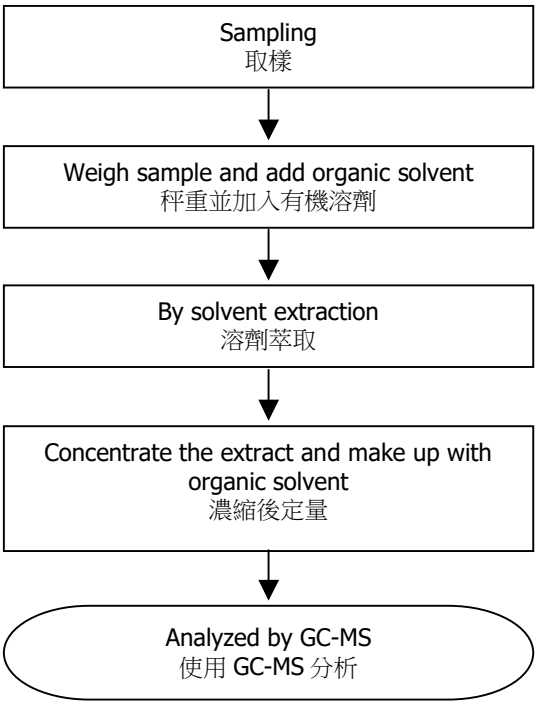
Test Conducted 測試內容：

1. Chemical Test Result 化學測試結果

Measurement Flowchart 測試流程圖:

Test for TBBPA Content 四溴雙酚-A 測試
Reference Method 參考方法：USEPA 3540C



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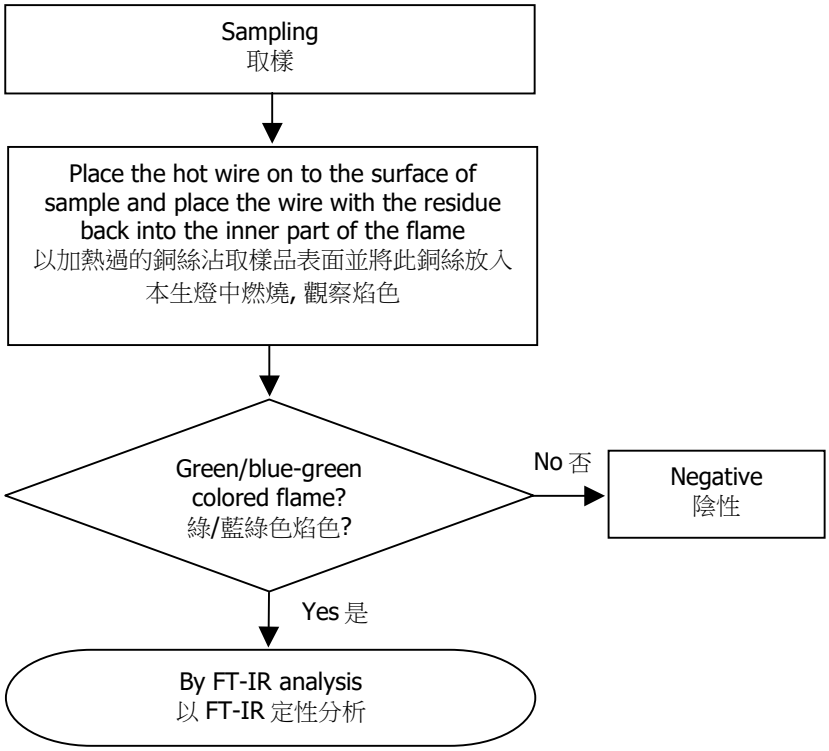
Test Conducted 測試內容：

1. Chemical Test Result 化學測試結果

Measurement Flowchart 測試流程圖:

Test for Polyvinyl Chloride (PVC) 聚氯乙烯測試
Reference Method 參考方法：Beilstein's Test (Flame Test) / FT-IR Analysis



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Test Conducted 測試內容：

2. Per- and Polyfluoroalkyl Substances (PFAS) 全氟烷基物質

By Gas Chromatographic-Mass Spectrometric (GC-MS) and Liquid Chromatography/tandem Mass Spectrometry (LC-MS-MS) analysis.
參考 CEN/TS 15968:2010，以溶劑萃取並用氣相層析質譜儀(GC-MS)及液相層析串聯質譜儀(LC-MS-MS)分析。

No.	Compound 化合物	CAS No.	Result 結果(ppm) Mixed all kinds of submitted samples(#)	MDL (ppm)
1.	Perfluorobutanoic acid (PFBA) 全氟丁酸	375-22-4	ND	0.01
2.	Perfluorobutanesulfonic acid (PFBS) 全氟丁磺酸	375-73-5	ND	0.01
3.	Potassium perfluorobutane sulfonate (PFBS-K) 全氟丁基磺酸鉀 (Calculated by PFBS Content 以 PFBS 含量換算)	29420-49-3	ND	--
4.	Sodium perfluorobutane sulfonate (PFBS-Na) 全氟丁基磺酸鈉 (Calculated by PFBS Content 以 PFBS 含量換算)	60453-92-1	ND	--
5.	Perfluorobutanesulfonyl fluoride (PFBS-F) 全氟丁基磺醯氟 (Calculated by PFBS Content 以 PFBS 含量換算)	375-72-4	ND	--
6.	Tetraethylammonium perfluorobutanesulfonate (PFBS-N(C_2H_5)$_4$) 全氟丁基磺酸四乙基銨 (Calculated by PFBS Content 以 PFBS 含量換算)	25628-08-4	ND	--
7.	Perfluoropentanoic acid (PFPeA) 全氟戊酸	2706-90-3	ND	0.01
8.	Perfluorohexanoic acid (PFHxA) 全氟己酸	307-24-4	ND	0.01
9.	Ammonium perfluorohexanoate (PFHxA-NH_4) 全氟己酸銨 (Calculated by PFHxA Content 以 PFHxA 含量換算)	21615-47-4	ND	--
10.	Sodium perfluorohexanoate (PFHxA-Na) 全氟己酸鈉 (Calculated by PFHxA Content 以 PFHxA 含量換算)	2923-26-4	ND	--
11.	Potassium Perfluorohexanoate (PFHxA-K) 全氟己酸鉀 (Calculated by PFHxA Content 以 PFHxA 含量換算)	3109-94-2	ND	--
12.	1H,1H,2H,2H-Perfluorooctanol (6:2 FTOH) 1H,1H,2H,2H-全氟辛醇	647-42-7	ND	0.1
13.	1H,1H,2H,2H-Perfluorooctyl acrylate (6:2 FTA) 1H,1H,2H,2H-全氟辛基丙烯酸酯	17527-29-6	ND	0.01
14.	1H,1H,2H,2H-Perfluorooctyl methacrylate (6:2 FTMA) 1H,1H,2H,2H-全氟辛基甲基丙烯酸酯	2144-53-8	ND	0.01

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Test Conducted 測試內容：

2. Per- and Polyfluoroalkyl Substances (PFAS) 全氟烷基物質

No.	Compound 化合物	CAS No.	Result 結果(ppm) Mixed all kinds of submitted samples(#)	MDL (ppm)
15.	1H,1H,2H,2H-Perfluorooctanesulphonic acid (6:2 FTS) 1H, 1H, 2H, 2H-全氟辛磺酸	27619-97-2	ND	0.01
16.	Perfluorohexanesulfonic acid (PFHxS) 全氟己磺酸	355-46-4	ND	0.01
17.	Perfluorohexane sulfonamide (PFHxSA) 全氟己磺醯胺	41997-13-1	ND	0.01
18.	N-Methylperfluoro-1-hexanesulfonamide (N-Me-FHxSA) N-甲基全氟己磺醯胺	68259-15-4	ND	0.01
19.	2-(N-Methylperfluoro-1-hexanesulfonamido)-ethanol (N-Me-FHxSE) N-甲基全氟己磺乙醇胺	68555-75-9	ND	0.01
20.	2-(N-Ethylperfluoro-1-hexanesulfonamido)-ethanol (N-Et-FHxSE) N-乙基全氟己磺乙醇胺	34455-03-3	ND	0.01
21.	Sodium perfluorohexanesulfonate (PFHxS-Na) 全氟己基磺酸鈉 (Calculated by PFHxS Content 以 PFHxS 含量換算)	82382-12-5	ND	--
22.	Potassium perfluorohexanesulfonate (PFHxS-K) 全氟己基磺酸鉀 (Calculated by PFHxS Content 以 PFHxS 含量換算)	3871-99-6	ND	--
23.	Ammonium perfluorohexanesulfonate (PFHxS-NH_4) 全氟己基磺酸銨 (Calculated by PFHxS Content 以 PFHxS 含量換算)	68259-08-5	ND	--
24.	Lithium perfluorohexanesulfonate (PFHxS-Li) 全氟己基磺酸鋰 (Calculated by PFHxS Content 以 PFHxS 含量換算)	55120-77-9	ND	--
25.	Zinc perfluorohexanesulfonate (PFHxS-Zn) 全氟己基磺酸鋅 (Calculated by PFHxS Content 以 PFHxS 含量換算)	70136-72-0	ND	--
26.	Perfluorohexanesulphonyl fluoride (PFHxS-F) 全氟己基磺醯氟 (Calculated by PFHxS Content 以 PFHxS 含量換算)	423-50-7	ND	--
27.	N,N,N-tributylbutan-1-aminium tridecafluorohexane-1-sulfonate N,N,N-三丁基丁-1-銨十三氟己烷-1-磺酸鹽 (Calculated by PFHxS Content 以 PFHxS 含量換算)	108427-54-9	ND	--
28.	N,N,N-triethylethanaminium tridecafluorohexane-1-sulfonate N,N,N-三乙基乙銨十三氟己烷-1-磺酸鹽 (Calculated by PFHxS Content 以 PFHxS 含量換算)	108427-55-0	ND	--
29.	Perfluoroheptanoic acid (PFHpA) 全氟庚酸	375-85-9	ND	0.01

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Test Conducted 測試內容：

2. Per- and Polyfluoroalkyl Substances (PFAS) 全氟烷基物質

No.	Compound 化合物	CAS No.	Result 結果(ppm) Mixed all kinds of submitted samples(#)	MDL (ppm)
30.	7H-Dodecafluoro heptane carboxylate (HPFHpA) 7H-十二氟庚烷羧酸	1546-95-8	ND	0.01
31.	Perfluoroheptanesulfonic acid (PFHpS) 全氟庚磺酸	375-92-8	ND	0.01
32.	Sodium perfluoroheptane sulfonate (PFHpS-Na) 全氟庚基磺酸鈉 (Calculated by PFHpS Content 以 PFHpS 含量換算)	21934-50-9	ND	--
33.	Perfluorooctanesulfonate (PFOS) 全氟辛磺酸	1763-23-1	ND	0.01
34.	Potassium Perfluorooctane sulfonate (PFOS-K) 全氟辛基磺酸鉀 (Calculated by PFOS Content 以 PFOS 含量換算)	2795-39-3	ND	--
35.	Lithium perfluorooctane sulfonate (PFOS-Li) 全氟辛基磺酸鋰 (Calculated by PFOS Content 以 PFOS 含量換算)	29457-72-5	ND	--
36.	Ammonium perfluorooctane sulfonate (PFOS-NH_4) 全氟辛基磺酸銨 (Calculated by PFOS Content 以 PFOS 含量換算)	29081-56-9	ND	--
37.	Diethanolamine perfluorooctane sulfonate (PFOS-$NH(OH)_2$) 全氟辛基磺酸-二乙醇銨 (Calculated by PFOS Content 以 PFOS 含量換算)	70225-14-8	ND	--
38.	Tetraethylammonium perfluorooctanesulfonate (PFOS-$N(C_2H_5)_4$) 全氟辛基磺酸-四乙基銨 (Calculated by PFOS Content 以 PFOS 含量換算)	56773-42-3	ND	--
39.	N-Decyl-N,N-dimethyl-1-decanaminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (PFOS-DDA) 全氟辛基磺酸-二癸二甲基銨 (Calculated by PFOS Content 以 PFOS 含量換算)	251099-16-8	ND	--
40.	Perfluorooctanesulfonyl fluoride (PFOS-F) 全氟辛基磺醯氟 (Calculated by PFOS Content 以 PFOS 含量換算)	307-35-7	ND	--
41.	Magnesium perfluorooctanesulfonate (PFOS-Mg) 全氟辛基磺酸鎂 (Calculated by PFOS Content 以 PFOS 含量換算)	91036-71-4	ND	--
42.	Sodium perfluorooctanesulfonate (PFOS-Na) 全氟辛基磺酸鈉 (Calculated by PFOS Content 以 PFOS 含量換算)	4021-47-0	ND	--

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Test Conducted 測試內容：

2. Per- and Polyfluoroalkyl Substances (PFAS) 全氟烷基物質

No.	Compound 化合物	CAS No.	Result 結果(ppm)	MDL (ppm)
			Mixed all kinds of submitted samples(#)	
43.	N-Ethylperfluorooctanesulfonamide (N-Et-FOSA) N-乙基全氟辛磺醯胺	4151-50-2	ND	0.01
44.	N-Methylperfluorooctanesulfonamide (N-Me-FOSA) N-甲基全氟辛磺醯胺	31506-32-8	ND	0.01
45.	N-Ethylperfluorooctanesulfonamidoethanol (N-Et-FOSE) N-乙基全氟辛磺乙醇胺	1691-99-2	ND	0.01
46.	N-Methylperfluorooctanesulfonamidoethanol (N-Me-FOSE) N-甲基全氟辛磺乙醇胺	24448-09-7	ND	0.01
47.	Perfluorooctanesulfonamide (PFOSA) 全氟辛烷磺醯胺	754-91-6	ND	0.01
48.	Perfluorooctanoate (PFOA) 全氟辛酸	335-67-1	ND	0.01
49.	Sodium perfluorooctanoate (PFOA-Na) 全氟辛酸鈉 (Calculated by PFOA Content 以 PFOA 含量換算)	335-95-5	ND	--
50.	Potassium perfluorooctanoate (PFOA-K) 全氟辛酸鉀 (Calculated by PFOA Content 以 PFOA 含量換算)	2395-00-8	ND	--
51.	Silver perfluorooctanoate (PFOA-Ag) 全氟辛酸銀 (Calculated by PFOA Content 以 PFOA 含量換算)	335-93-3	ND	--
52.	Perfluorooctanoyl fluoride (PFOA-F) 全氟辛酸-氟化物 (Calculated by PFOA Content 以 PFOA 含量換算)	335-66-0	ND	--
53.	Ammonium perfluorocaprylate (APFO) 全氟辛酸銨 (Calculated by PFOA Content 以 PFOA 含量換算)	3825-26-1	ND	--
54.	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS) 1H, 1H, 2H, 2H-全氟癸磺酸	39108-34-4	ND	0.01
55.	Methyl perfluorooctanoate (Me-PFOA) 全氟辛酸甲酯	376-27-2	ND	0.01
56.	Ethyl perfluorooctanoate (Et-PFOA) 全氟辛酸乙酯	3108-24-5	ND	0.01
57.	1H,1H,2H,2H-Perfluorodecanol (8:2 FTOH) 1H,1H,2H,2H-全氟癸醇	678-39-7	ND	0.1
58.	1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA) 1H,1H,2H,2H-全氟癸基丙烯酸酯	27905-45-9	ND	0.01
59.	1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA) 1H,1H,2H,2H-全氟癸基甲基丙烯酸酯	1996-88-9	ND	0.01

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Test Conducted 測試內容：

2. Per- and Polyfluoroalkyl Substances (PFAS) 全氟烷基物質

No.	Compound 化合物	CAS No.	Result 結果(ppm) Mixed all kinds of submitted samples(#)	MDL (ppm)
60.	Perfluorooctyl iodide (PFOI) 全氟辛基碘	507-63-1	ND	0.01
61.	Perfluorononanoic acid (PFNA) 全氟壬酸	375-95-1	ND	0.01
62.	Sodium perfluorononanoate (PFNA-Na) 全氟壬酸鈉 (Calculated by PFNA Content 以 PFNA 含量換算)	21049-39-8	ND	--
63.	Ammonium perfluorononanoate (APFN) 全氟壬酸銨 (Calculated by PFNA Content 以 PFNA 含量換算)	4149-60-4	ND	--
64.	Perfluoro-3,7-dimethyloctanoic acid (PF-3,7-DMOA) 全氟-3-7-二甲基辛酸	172155-07-6	ND	0.01
65.	Perfluorodecanoic acid (PFDA) 全氟癸酸	335-76-2	ND	0.01
66.	Sodium perfluorodecanoate (PFDA-Na) 全氟癸酸鈉 (Calculated by PFDA Content 以 PFDA 含量換算)	3830-45-3	ND	--
67.	Ammonium perfluorodecanoate (APFD) 全氟癸酸銨 (Calculated by PFDA Content 以 PFDA 含量換算)	3108-42-7	ND	--
68.	Perfluoroundecanoic acid (PFUnDA) 全氟十一酸	2058-94-8	ND	0.01
69.	Perfluorododecanoic acid (PFDoDA) 全氟十二酸	307-55-1	ND	0.01
70.	Ammonium Perfluorododecanoate (APFDoDA) 全氟十二酸銨 (Calculated by PFDoDA Content 以 PFDoDA 含量換算)	3793-74-6	ND	--
71.	Perfluorodecanesulfonic acid (PFDS) 全氟癸磺酸	335-77-3	ND	0.01
72.	Sodium perfluorodecanesulfonate (PFDS-Na) 全氟癸基磺酸鈉 (Calculated by PFDS Content 以 PFDS 含量換算)	2806-15-7	ND	--
73.	Potassium perfluorodecanesulfonate (PFDS-K) 全氟癸基磺酸鉀 (Calculated by PFDS Content 以 PFDS 含量換算)	2806-16-8	ND	--
74.	Ammonium henicosafluoro decanesulfonate (PFDS-NH_4) 全氟癸基磺酸銨 (Calculated by PFDS Content 以 PFDS 含量換算)	67906-42-7	ND	--
75.	Perfluorotridecanoic acid (PFTriDA) 全氟十三酸	72629-94-8	ND	0.01

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Test Conducted 測試內容：

2. Per- and Polyfluoroalkyl Substances (PFAS) 全氟烷基物質

No.	Compound 化合物	CAS No.	Result 結果(ppm) Mixed all kinds of submitted samples(#)	MDL (ppm)
76.	Perfluorotetradecanoic acid (PFTeDA) 全氟十四酸	376-06-7	ND	0.01
77.	1H,1H,2H,2H-Perfluorododecyl acrylate (10:2 FTA) 1H,1H,2H,2H-全氟十二烷基丙烯酸酯	17741-60-5	ND	0.01
78.	1H,1H,2H,2H-Perfluorododecanol (10:2 FTOH) 1H,1H,2H,2H-全氟十二醇	865-86-1	ND	0.1
79.	1H,1H,2H,2H-Perfluorotetradecanol (12:2 FTOH) 1H,1H,2H,2H-全氟十四醇	39239-77-5	ND	0.1
80.	1H,1H,2H,2H-Perfluorododecyl iodide (10:2 FTI) 1H,1H,2H,2H-全氟碘代十二烷	2043-54-1	ND	0.01
81.	1H,1H,2H,2H-Perfluorododecyl methacrylate (10:2 FTMA) 1H,1H,2H,2H-全氟十二烷基甲基丙烯酸酯	2144-54-9/ 162953-69-7	ND	0.01
82.	1H,1H,2H,2H-Perfluorododecanesulphonic acid (10:2 FTS) 1H,1H,2H,2H-全氟十二烷磺酸	120226-60-0	ND	0.01
83.	1H,1H,2H,2H-Perfluorotetradecyl iodide (12:2 FTI) 1H,1H,2H,2H-全氟碘代十四烷	30046-31-2	ND	0.01
84.	2H,2H-Perfluorodecanoic acid (H2PFDA) 2H,2H-全氟癸酸	27854-31-5	ND	0.01
85.	2H,2H,3H,3H-Perfluoroundecanoic acid (4HPFUnA) 2H,2H,3H,3H-全氟十一酸	34598-33-9	ND	0.01
86.	1H,1H,2H,2H-Perfluorohexanol (4:2 FTOH) 1H,1H,2H,2H-全氟-1-己醇	2043-47-2	ND	0.1
87.	1H,1H,2H,2H-Perfluorodecyl iodide (8:2 FTI) 1H,1H,2H,2H-全氟癸基碘	2043-53-0	ND	0.01
88.	Perfluoro(2-methyl-3-oxahexanoic) acid (HFPO-DA) 全氟(2-甲基-3-氧雜己酸)	13252-13-6	ND	0.01
89.	1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS) 1H,1H,2H,2H-全氟己磺酸	757124-72-4	ND	0.01
90.	Perfluorooctane sulfonamidoacetic acid (FOSAA) 全氟辛基磺酸胺乙酸	2806-24-8	ND	0.01
91.	N-methylperfluorooctane sulfonamidoacetic acid (N-MeFOSAA) N-甲基全氟辛基磺酸胺乙酸	2355-31-9	ND	0.01
92.	N-ethylperfluorooctane sulfonamidoacetic acid (N-EtFOSAA) N-乙基全氟辛基磺酸胺乙酸	2991-50-6	ND	0.01
93.	Perfluorononanesulfonic acid (PFNS) 全氟壬磺酸	68259-12-1	ND	0.01

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Test Conducted 測試內容：

2. Per- and Polyfluoroalkyl Substances (PFAS) 全氟烷基物質

No.	Compound 化合物	CAS No.	Result 結果(ppm) Mixed all kinds of submitted samples(#)	MDL (ppm)
94.	Perfluorononanesulfonic acid sodium salt (PFNS-Na) 全氟壬磺酸鈉 (Calculated by PFNS Content 以 PFNS 含量換算)	98789-57-2	ND	--
95.	1H,1H,2H,2H-Perfluorohexyl methacrylate (4:2 FTMA) 1H,1H,2H,2H-全氟己基甲基丙烯酸酯	1799-84-4	ND	0.01

Remarks: 備註

ppm = Parts per million based on weight of tested sample = mg/kg
百萬分之一，依據測試樣品重量計算 = 毫克/公斤

ND = Not detected 未檢測出

MDL = Quantitation limit of test method 方法偵測極限

= Test results were for reference only and might not represent the real content in each component as the composite sampling procedure was according to the special request of client. Please be noted the fewer components are mixed up, the better representation of sampling will get.
依據客戶要求進行混合測試，故本測試結果僅供參考，且該混測結果不一定能代表各分測結果。請注意混測數量越少，各樣品取樣代表性會越佳。

Intertek Testing Services Taiwan Ltd.
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Sample photo 樣品照片：

End of Report

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