



**Test Report**

Number : TWNC00251977

Applicant 申請商: Kimoto Co.,Ltd.  
19-1, Shinjuku 2-Chome,  
Shinjuku-Ku, Tokyo 160-0022,  
Japan

Date : Apr 10, 2012

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 : CARBONFEATHER X4LG (25,38,µm)

樣品名稱

Date Job Applied : Apr 09, 2012

申請日期

Test Conducted 測試執行 :

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

Remark 備註 :

Results were transferred from report No. TWNC00230529 dated Nov 07, 2011.  
分析結果是由 TWNC00230529 , 日期 Nov 07, 2011 的報告轉載。

Authorized By:  
On Behalf Of Intertek Testing Services  
Taiwan Limited



K. Y. Liang  
Director

This report shall not be reproduced  
except in full, without the written  
approval of the laboratory.

Test Conducted

(I) Test Result Summary 測試結果 :

Test Item 測試項目	Result 結果 (ppm)
	Black Plastic Film
<b>Heavy Metal / 重金屬</b>	
Cadmium (Cd) content / 鎘含量	ND
Lead (Pb) content / 鉛含量	ND
Mercury (Hg) content / 汞含量	ND
Antimony (Sb) Content / 銻含量	165
Chromium VI (Cr <sup>6+</sup> ) content / 六價鉻含量	ND
<b>Polybrominated Biphenyls (PBBs) / 多溴聯苯</b>	
Monobrominated Biphenyls (MonoBB) / 單溴聯苯	ND
Dibrominated Biphenyls (DiBB) / 二溴聯苯	ND
Tribrominated Biphenyls (TriBB) / 三溴聯苯	ND
Tetrabrominated Biphenyls (TetraBB) / 四溴聯苯	ND
Pentabrominated Biphenyls (PentaBB) / 五溴聯苯	ND
Hexabrominated Biphenyls (HexaBB) / 六溴聯苯	ND
Heptabrominated Biphenyls (HeptaBB) / 七溴聯苯	ND
Octabrominated Biphenyls (OctaBB) / 八溴聯苯	ND
Nonabrominated Biphenyls (NonaBB) / 九溴聯苯	ND
Decabrominated Biphenyl (DecaBB) / 十溴聯苯	ND
<b>Polybrominated Diphenyl Ethers (PBDEs) / 多溴聯苯醚</b>	
Monobrominated Diphenyl Ethers (MonoBDE) / 單溴聯苯醚	ND
Dibrominated Diphenyl Ethers (DiBDE) / 二溴聯苯醚	ND
Tribrominated Diphenyl Ethers (TriBDE) / 三溴聯苯醚	ND
Tetrabrominated Diphenyl Ethers (TetraBDE) / 四溴聯苯醚	ND
Pentabrominated Diphenyl Ethers (PentaBDE) / 五溴聯苯醚	ND
Hexabrominated Diphenyl Ethers (HexaBDE) / 六溴聯苯醚	ND
Heptabrominated Diphenyl Ethers (HeptaBDE) / 七溴聯苯醚	ND
Octabrominated Diphenyl Ethers (OctaBDE) / 八溴聯苯醚	ND
Nonabrominated Diphenyl Ethers (NonaBDE) / 九溴聯苯醚	ND
Decabrominated Diphenyl Ether (DecaBDE) / 十溴聯苯醚	ND

Test Conducted

(I) Test Result Summary 測試結果 :

Test Item 測試項目	Result 結果 (ppm)
	Black Plastic Film
<b>Polycyclic Aromatic Hydrocarbons (PAHs) / 多環芳香族化合物</b>	
Naphthalene / 萘	ND
Acenaphthylene / 芴烯	ND
Acenaphthene / 芴	ND
Fluorene / 芴	ND
Phenanthrene / 菲	ND
Anthracene / 蒽	ND
Fluoranthene / 苯駢芘	ND
Pyrene / 芘	ND
Chrysene / 屈	ND
Benzo[a]Anthracene / 苯[a]駢蒽	ND
Benzo[b]Fluoranthene / 苯[b]駢芘	ND
Benzo[k]Fluoranthene / 苯[k]駢芘	ND
Benzo[a]Pyrene / 苯[a]駢芘	ND
Dibenzo[a,h]Anthracene / 二苯駢[a,h]蒽	ND
Indeno[1,2,3-c,d]Pyrene / 茛[1,2,3-c,d]芘	ND
Benzo[g,h,i]Perylene / 苯[g,h,i]駢芘	ND
Sum of PAHs / PAHs總和	ND
<b>Halogen Content / 鹵素含量</b>	
Fluorine (F) / 氟	ND
Chlorine (Cl) / 氯	ND
Bromine (Br) / 溴	ND
Iodine (I) / 碘	ND
<b>Phthalates / 鄰苯二甲酸酯</b>	
Di(2-ethylhexyl) Phthalate (DEHP) / 鄰苯二甲酸二(2-乙基己基)酯	ND
Dibutyl Phthalate (DBP) / 鄰苯二甲酸二丁酯	ND
Benzyl Butyl Phthalate (BBP) / 鄰苯二甲酸苯基丁酯	ND
Di-(Iso-Nonyl) Phthalate (DINP) / 鄰苯二甲酸二異壬酯	ND
Di-(Iso-Decyl) Phthalate (DIDP) / 鄰苯二甲酸二異癸酯	ND
Di-(N-Octyl) Phthalate (DNOP) / 鄰苯二甲酸二辛酯	ND

## Test Conducted

## (I) Test Result Summary 測試結果 :

Test Item 測試項目	Result 結果 (ppm)
	Black Plastic Film
<b>Others 其他</b>	
Tetrabromobisphenol-A (TBBP-A) / 四溴雙酚	ND
Polyvinyl Chloride (PVC) / 聚氯乙烯和聚氯乙烯混合物	Negative
Perfluorooctane Sulfonates (PFOS) / 全氟辛磺酸	ND
Perfluorooctanoic Acid (PFOA) / 全氟辛酸	ND

Remarks: ppm = parts per million based on weight of tested sample = mg/kg  
 備註 = 百萬分之一，依據測試樣品重量計算  
 ND = Not Detected = 未檢測出

Responsibility of Chemist 分析人員 : Irene Chiou / Kevin Liu / Cathy Chen

Date Sample Received 樣品收件日期 : Oct 31, 2011

Test Period 樣品測試期間 : Nov 02, 2011 To Nov 07, 2011

## (II) RoHS Requirement 限值:

Restricted Substances 限用物質	Limits 限值
Cadmium (Cd) content / 鎘含量	0.01% (100ppm)
Lead (Pb) content / 鉛含量	0.1% (1000ppm)
Mercury (Hg) content / 汞含量	0.1% (1000ppm)
Chromium VI (Cr <sup>6+</sup> ) content / 六價鉻含量	0.1% (1000ppm)
Polybrominated Biphenyls (PBBs) / 多溴聯苯	0.1% (1000ppm)
Polybrominated Diphenyl Ehters (PBDEs) / 多溴聯苯醚	0.1% (1000ppm)

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

本限值是依據歐盟指令 2002/95/EC 與其更新指令 2005/618/EC 針對均質材質所訂定。

## Test Conducted

(II) RoHS Requirement 限值:

## Limits For PAHs In Products 限值:

Parameter 分類	Product 產品	Benzo[a]Pyrene 苯[a]駢芘	Sum 16 PAH (EPA) 總合
Category 1 第一類	a. Direct Contact With Food 直接接觸食物 b. Indented To Be Put In The Mouth And Toys For Children Aged < 36 Months 針對可放入口中的產品及三歲以下兒童玩具	Not Detected (<0.2 mg/kg)# 不得檢出	Not Detected (<0.2 mg/kg)# 不得檢出
Category 2 第二類	a. Foreseeable Contact To Skin For Longer Than 30 Seconds 直接接觸皮膚超過 30 秒 b. Toys Not Covered By Category 1 不屬於第一類的玩具	1 mg/kg	10 mg/kg
Category 3 第三類	a. Foreseeable Contact To Skin Up To 30 Seconds 直接接觸皮膚不超過 30 秒 b. Without Skin Contact. 不直接接觸皮膚	20 mg/kg	200 mg/kg

## (III) Test Method 測試方法:

Test Item 測試項目	Test Method 測試方法	MDL 方法偵測極限
Cadmium (Cd) content 鎘含量	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. 參考IEC 62321, 2008年第一版第8/9/10章, 以微波消化法測試樣品直到樣品完全溶解並用感應耦合電漿原子放射光譜儀分析。	2 ppm
Lead (Pb) content 鉛含量	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. 參考IEC 62321, 2008年第一版第8/9/10章, 以微波消化法測試樣品直到樣品完全溶解並用感應耦合電漿原子放射光譜儀分析。	2 ppm

## Test Conducted

## (III) Test Method 測試方法:

<u>Test Item</u> 測試項目	<u>Test Method</u> 測試方法	<u>MDL</u> 方法偵測極限
Mercury (Hg) content 汞含量	With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. 參考IEC 62321, 2008年第一版第7章, 以微波消化法測試樣品直到樣品完全溶解並用感應耦合電漿原子放射光譜儀分析。	2 ppm
Antimony (Sb) Content 銻含量	With reference to USEPA 3052, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES 參考USEPA 3052, 以微波消化法消化測試樣品直到樣品完全溶解並用感應耦合電漿原子放射光譜儀分析。	2 ppm
Chromium VI (Cr <sup>6+</sup> ) content 六價鉻含量	With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer. 參考IEC 62321, 2008年第一版附錄C, 以鹼液消化並用紫外光-可見光分光光度計分析。	1 ppm
Polybrominated Biphenyls (PBBs) 多溴聯苯	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary 參考IEC 62321, 2008年第一版附錄A, 以溶劑萃取並用氣相層析質譜儀分析, 必要時會以高效能液相層析-二極體陣列偵檢器進行確認。	5 ppm
Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary 參考IEC 62321, 2008年第一版附錄A, 以溶劑萃取並用氣相層析質譜儀分析, 必要時會以高效能液相層析-二極體陣列偵檢器進行確認。	5 ppm

Test Conducted

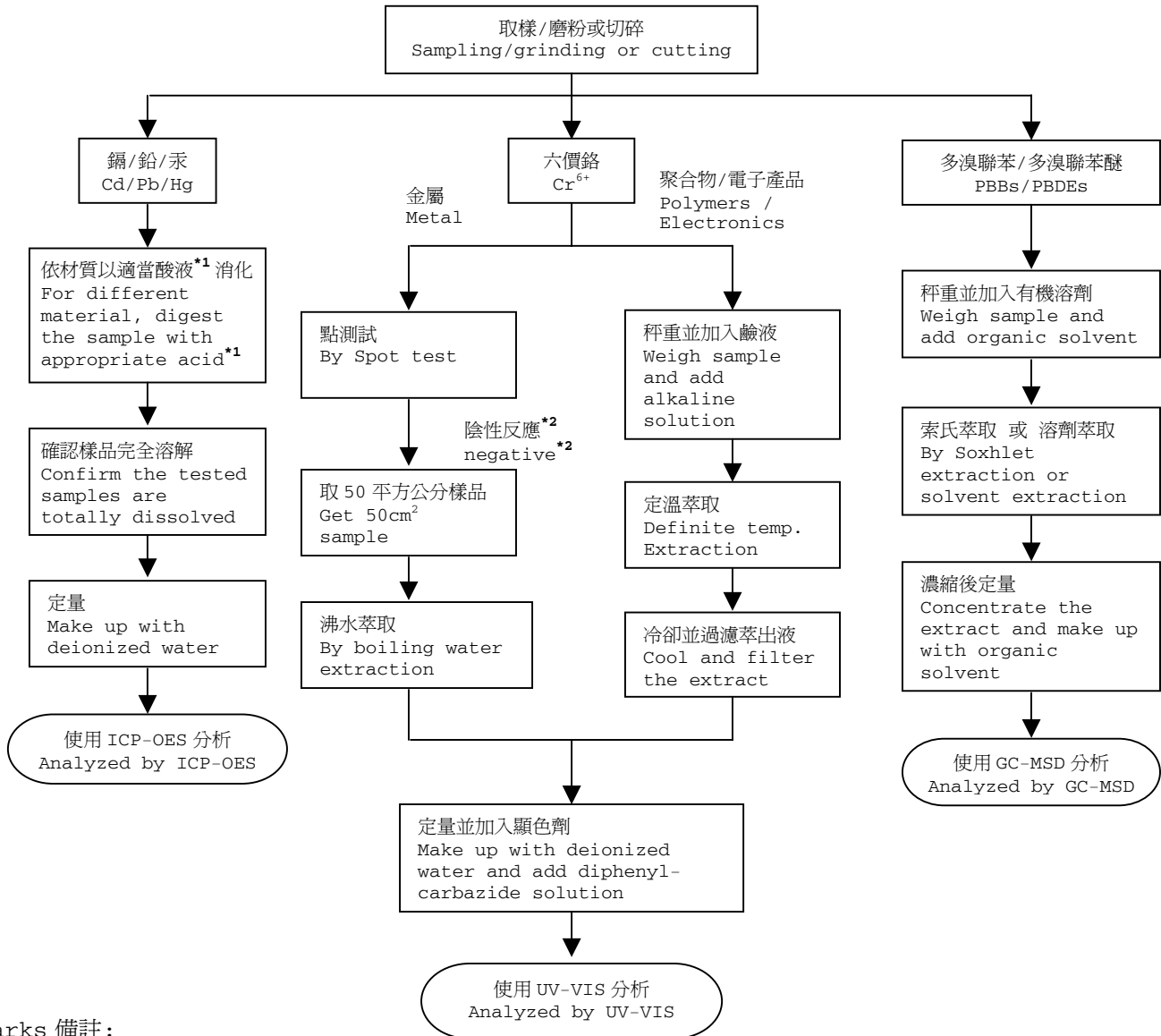
(III) Test Method 測試方法:

<u>Test Item</u> 測試項目	<u>Test Method</u> 測試方法	<u>MDL</u> 方法偵測極限
Polycyclic Aromatic Hydrocarbons (PAHs) 多環芳香族化合物	With reference to the document ZEK 01.2-08 issued by the central experience exchange office (ZEK), by solvent extraction and determined by GC-MSD. 參考由ZEK發行的文件ZEK-01.2-08，以溶劑萃取並以氣相層析-質譜儀分析。	0.2 ppm
Halogen Content 鹵素含量	With reference to EN 50267-2-2:1999 by tube furnace combustion and EN 14582:2007 determined by ion chromatography 參考EN 50267-2-2:1999及EN 14582:2007 以管狀高溫爐燃燒集氣法並用離子層析儀分析。	30 ppm
Phthalates 鄰苯二甲酸酯	With reference to EN 14372: 2004, by solvent extraction and determined by GC-MSD 參考EN 14372: 2004，以溶劑萃取測試樣品並用氣相層析-質譜儀分析。	50 ppm
Tetrabromobisphenol-A (TBBP-A) 四溴雙酚-A	With reference to USEPA 3540C, by solvent extraction and determined by GC-MSD 參考USEPA 3540C，以溶劑萃取並用氣相層析-質譜儀分析。	20 ppm
Polyvinyl Chloride (PVC) 聚氯乙烯和聚氯乙烯混合物	Beilstein's test (Flame Test) and FT-IR analysis 火焰法及傅立葉轉換紅外線吸收光譜儀檢測。	NA
Perfluorooctane Sulfonates (PFOS) 全氟辛磺酸	With reference to CENTS 15968_2010, by solvent extraction and determined by LC/MS/MS 參考CENTS 15968_2010，以溶劑萃取並用液相層析串聯式質譜儀分析。	10 ppm
Perfluorooctanoic Acid (PFOA) 全氟辛酸	With reference to CENTS 15968_2010, by solvent extraction and determined by LC/MS/MS 參考CENTS 15968_2010，以溶劑萃取並用液相層析串聯式質譜儀分析。	10 ppm

Remarks備註: MDL = Quantitation limit of test method = 方法偵測極限  
NA = Not applicable = 不適用

## Test Conducted

## (IV) Measurement Flowchart 測試流程圖:

 Test for Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents RoHS六項測試流程圖  
 Reference Standard 參考方法: IEC 62321 edition 1.0:2008


## Remarks 備註:

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

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

 \*2: If the result of spot test is positive, Chromium VI would be determined as detected.  
 若點測試的結果為陽性反應，則直接判定為測試樣品含有六價鉻。

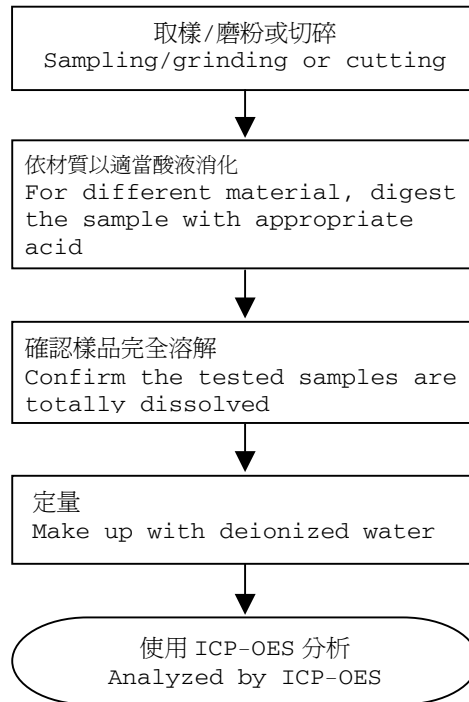


Test Conducted

(IV) Measurement Flowchart 測試流程圖:

Test For Heavy Metal (Sb) Contents 重金屬(銻)測試流程圖

Reference Standard 參考方法: USEPA 3052

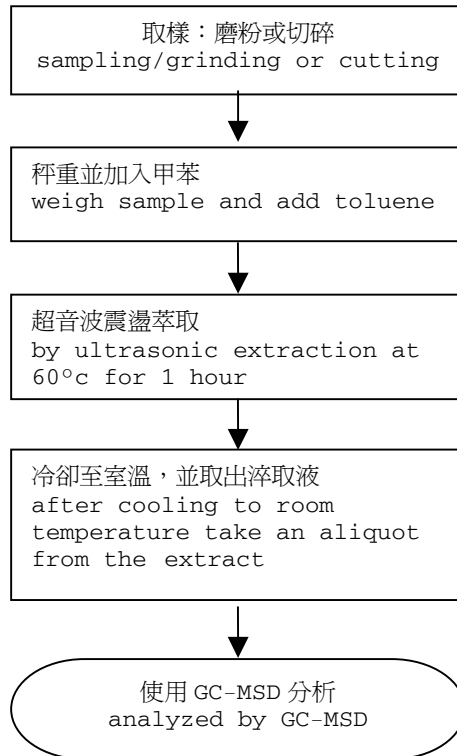


Test Conducted

(IV) Measurement Flowchart 測試流程圖:

Test For Polycyclic Aromatic Hydrocarbons (PAHs) Contents  
多環芳香族化合物測試流程圖

Reference Standard 參考方法 : ZEK 01-08

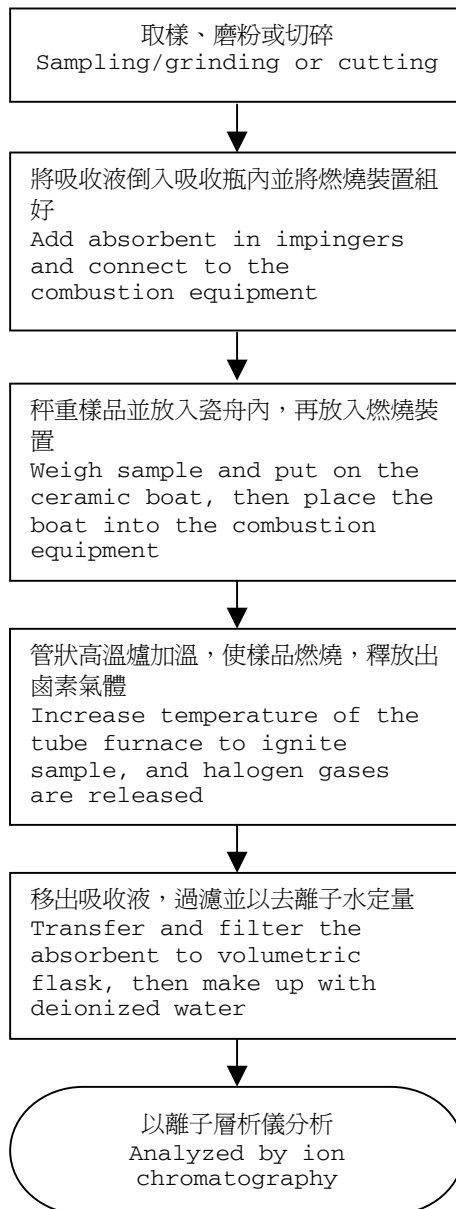


Test Conducted

(IV) Measurement Flowchart 測試流程圖:

Test For Halogen Content 鹵素測試流程圖

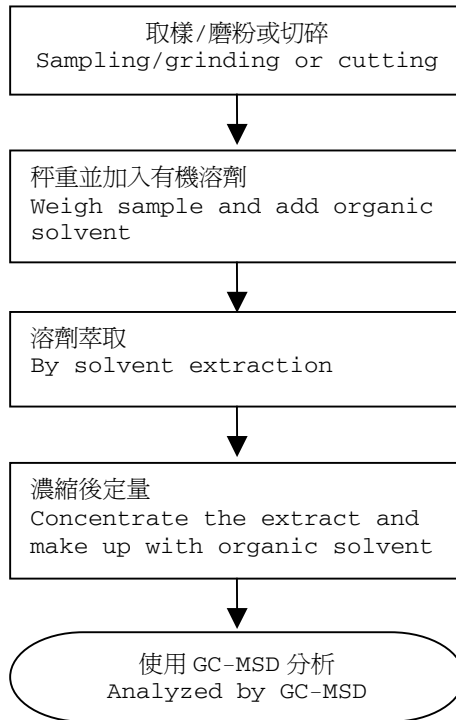
Reference Standard 參考方法: EN 50267-2-2 &amp; EN 14582



Test Conducted

(IV) Measurement Flowchart 測試流程圖:

Test For Phthalates Contents 鄰苯二甲酸酯測試流程圖  
Reference Method 參考方法: EN 14372: 2004

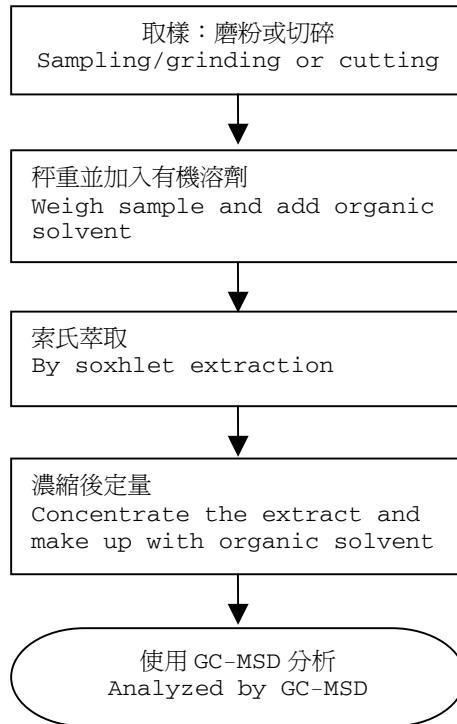


Test Conducted

(IV) Measurement Flowchart 測試流程圖:

Test For TBBPA Contents 四溴雙酚-A測試流程圖

Reference Standard 參考方法 : USEPA 3540C

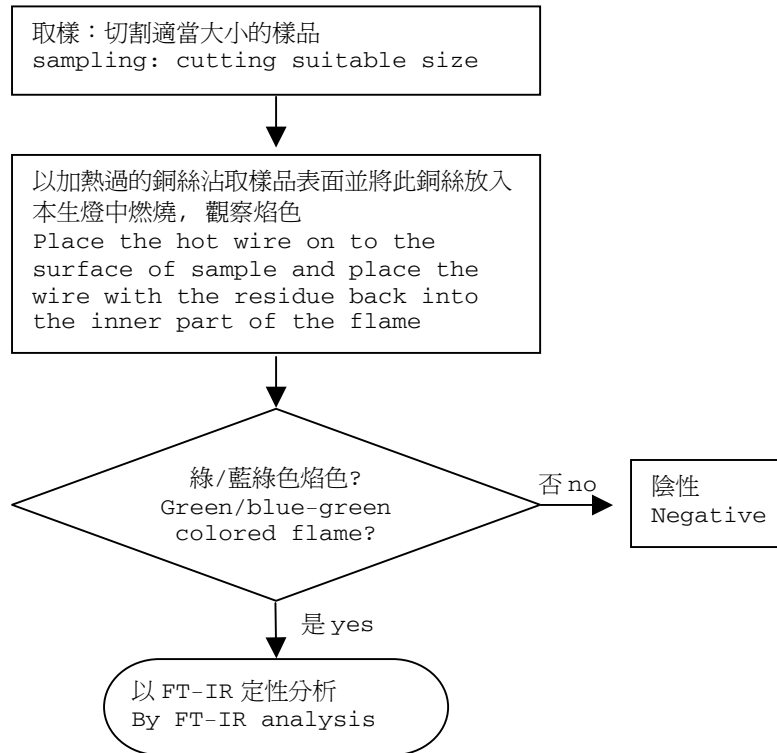


Test Conducted

(IV) Measurement Flowchart 測試流程圖:

Test For Polyvinyl Chloride (PVC) 聚氯乙烯和聚氯乙烯混合物測試流程圖

Reference Method 參考方法: Beilstein's Test (Flame Test) / FT-IR Analysis

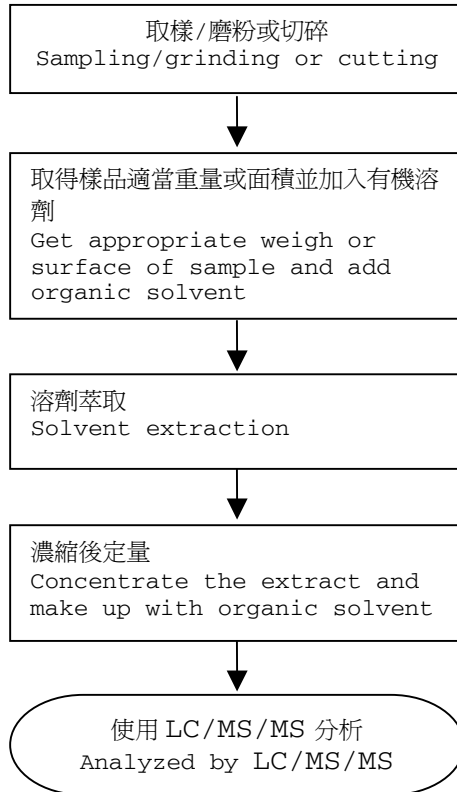


Test Conducted

(IV) Measurement Flowchart 測試流程圖:

Test For Perfluorooctane Sulfonates (PFOS) / Perfluorooctanoic Acid (PFOA)  
Contents 全氟辛磺酸 / 全氟辛酸測試流程圖

Reference Method 參考方法: CENTS 15968\_2010



---

End of Report

Test Conducted

Photo

