承認書

SPECIFICATION FOR APPROVAL

■樣品承認□新品承認□規格/材質變更承認

客戶名稱(Customer):	東荃科技股份有限公司		
客戶料號(Customer P/N):	5060-A137CC+460		
產品料號(Product No.):	A8-A006-00522		
產品品名(Product Name)：	PCB 2.4GHz~2.5GHz/5.15~5.85GHz 3dBi/4.5dBi 31mmx17mm T0.8 black OD1.13 normal 65mm I-PEX plug		
文件編號(Approved No)：			
日期(Issued Date)：	2018 年 12 月 21 日		
客戶承認簽章 Customer Approval Signature	In Charge	Checked	Approval

TSKY 天凱科技股份有限公司 **TSKY CO., LTD.**

新竹縣竹北市自強南路8號21F-2 Tel:03-5502626 Fax:03-5503131

21F-2,No.8,Ziqiang S.Rd., Jhubei City, Hsinchu County 30264,Taiwan (R.O.C.)

業務	核准	審核	主辦員

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Specification

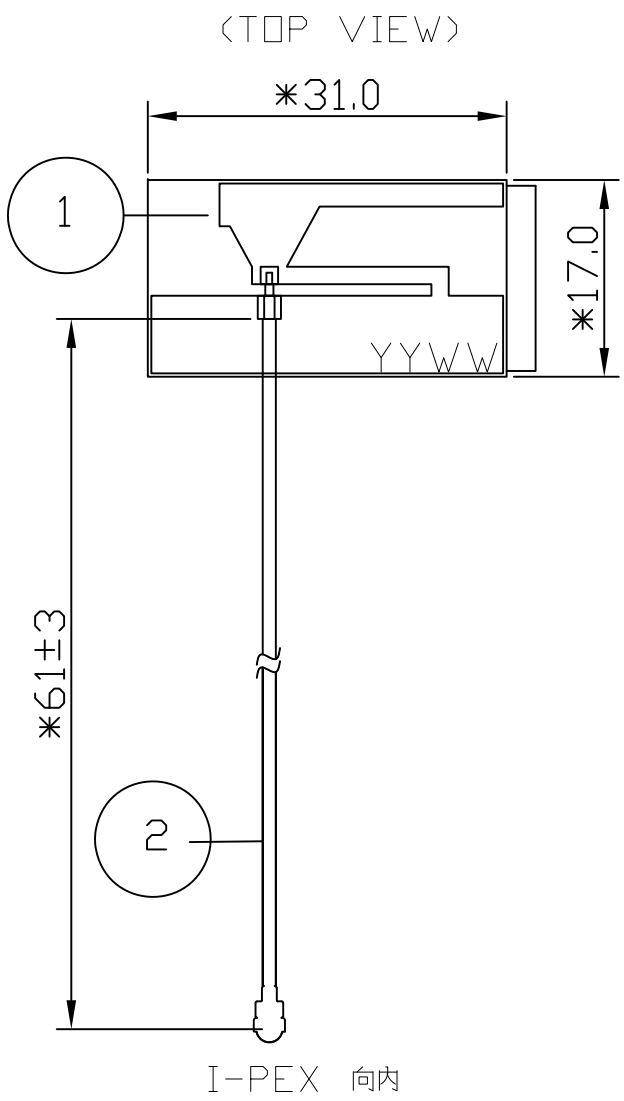
- **Electrical Properties :**

  1. Frequency : 2.4GHz~2.5GHz/5.15~5.85GHz
  2. Impedance : 50Ω
  3. Return Loss : ≦ -10dB
  4. Peak Gain : 3dBi / 4.5dBi

- **Physical Properties :**

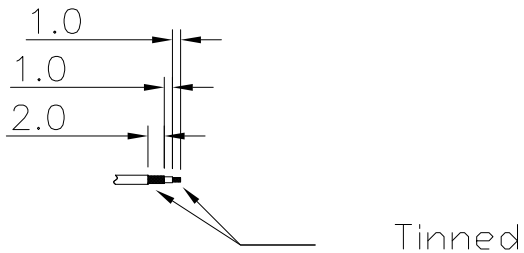
  1. Material : FR-4 T=0.8mm
  2. Cable : OD1.13 NORMAL
  3. Connector : I-PEX

REV	ECN NO.	DRAWING	DESCRIPTION	APPROVED	DATE
x1		Jane	初版發行	Gary	2018/11/15



ELECTRICAL:
Frequency:2.4GHz~2.5GHz/5.15GHz~5.85GHz
Impedance:50Ω
Peak Gain: 3dBi/4.5dBi
Return Loss: ≦-10dB

MECHANICAL:
Cable: D1.13 BLACK L=65mm



NOTE:
1.文字顏色為白色
2.*為重點量測尺寸
3.I-PEX方向請按照圖面所示
4.YYWW為date code,會隨著生產週期產生序號

NO.	PART NO.	DESCRIPTION	Q'TY	REV.
3	A2-A001-000**	30x16mm G9000 雙面背膠	1	X1
2	A0-A002-00***	RF CABLE OD1.13 NORMAL 65mm BLACK IPEX PLUG+2(編)-1(絕)-1(芯)	1	X1
1	A1-A003-000**	PCB ANT FR-4 L31 W17 T0.8mm 單面OSP雙面黑漆 FOR A8-A006-00522	1	X1

TOLERANCE UNLESS OTHERWISE SPECIFIED			
DIMENSION		ANGLES	
.X±	0.2	X.°±	0.5
.XX±	0.1		
.XXX±	0.05		

TSKY CO., LTD.

CONFIDENTIAL	FINISH:		
	SIZE: A4	UNIT: mm	SCALE: 1 : 1
DRAWING	DESIGNED	CONCURRED	APPROVED
Jane			Gary

INITIAL MODEL:

PART NAME
PCB 2.4GHz~2.5GHz/5.15~5.85GHz
3dBi/4.5dBi 31mmx17mm T0.8 black
OD1.13 normal 65mm I-PEX plug

PART NO.	REV.	SHT.
A8-A006-00522	X1	1/1

測試報告
Test Report

號碼(No.) : CE/2017/C0524　　日期(Date) : 2017/12/15　　頁數(Page): 1 of 39

南亞塑膠工業股份有限公司(台灣) / NAN YA PLASTICS CORPORATION (TAIWAN)
(南亞電子材料(昆山)有限公司 / NAN YA ELECTRONIC MATERIALS (KUNSHAN) CORP., LTD.)
(南亞電子材料(惠州)有限公司 / NAN YA ELECTRONIC MATERIALS (HUIZHOU) CORP., LTD.)
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(江蘇省昆山昆山市長江南路201號 / 201 CHANG JIANG ROAD(S) KUNSHAN ECONOMIC & TECHNICAL DEVELOPMENT ZONE, JIANG SU)
(廣東省惠州市博羅縣石灣鎮永石大道 / YONGSHI BOULEVARD SHIWAN TOWN BOLUO COUNTY HUIZHOU CITY GUANG DONG)

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

送樣廠商(Sample Submitted By)	:	南亞塑膠工業股份有限公司 (NAN YA PLASTICS CORPORATION)
樣品名稱(Sample Description)	:	LAMINATE (UL E98983)
樣品型號(Style/Item No.)	:	NP-140R/NP-140TL
買主/訂單號碼(Buyer/Order No.)	:	7A10213
收件日期(Sample Receiving Date)	:	2017/12/04
測試期間(Testing Period)	:	2017/12/04 TO 2017/12/13

==========

測試需求(Test Requested):

(1) 依據客戶指定，參考RoHS2011/65/EU Annex II及其修訂指令(EU) 2015/863測試鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP. (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).)

(2) 其他測試項目請見下一頁 . (Please refer to next pages for the other item(s).)

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

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

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

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測試報告
Test Report

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

測試結果(Test Results)

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

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

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Test Report

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

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

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測試報告
Test Report

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1	限值 (Limit)
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	參考US EPA 3550C (2007)，以液相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by LC/MS.	10	n.d.	-
全氟辛酸 / PFOA (CAS No.: 335-67-1)	mg/kg		10	n.d.	-
2-[2-羥基-3',5'-二-叔-丁基苯基]-苯並三唑(紫外線吸收劑320) / 2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320) (CAS No.: 3846-71-7)	mg/kg	參考US EPA 3550C (2007)，以氣相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	5	n.d.	-
二氯化鈷 / Cobalt dichloride (CAS No.: 7646-79-9)	mg/kg	參考SGS內部方法RSTS-EE-SVHC-007，以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.	50	n.d.	-
多氯聯苯 / Polychlorinated Biphenyls (PCBs) (CAS No.: 1336-36-3)	mg/kg	參考US EPA 3550C (2007)，以氣相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	0.5	n.d.	-
多氯奈 / Polychlorinated Naphthalene (PCNs)	mg/kg		5	n.d.	-
多氯三聯苯 / Polychlorinated Terphenyls (PCTs)	mg/kg		0.5	n.d.	-
短鏈氯化石蠟 / Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (CAS No.: 85535-84-8)	mg/kg		100	n.d.	-
双(2-甲氧基乙基)醚 / Bis(2-methoxyethyl) ether (CAS No.: 111-96-6)	mg/kg	參考US EPA 3550C (2007)，以氣相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	10	n.d.	-
N,N-二甲基乙醯胺 / N,N-dimethylacetamide (DMAC) (CAS No.: 127-19-5)	mg/kg		10	n.d.	-
乙二醇二甲醚 / Ethylene glycol dimethyl ether (EGDME) (CAS No.: 110-71-4)	mg/kg		10	n.d.	-

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測試報告
Test Report

號碼(No.) : CE/2017/C0524　　日期(Date) : 2017/12/15　　頁數(Page): 5 of 39

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

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測試報告
Test Report

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

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

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

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

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

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

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1	限值 (Limit)
1,4-二氫八氟丁烷 / 1,4-dihydrooctafluorobutane (CAS No.: 377-36-6)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
2-全氟甲基丁烷 / nonafluor-2-(trifluoromethyl)butane (CAS No.: 594-91-2)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
全氟戊烷 / perfluoro-n-pentane (CAS No.: 678-26-2)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
2-全氟甲基戊烷 / 2-perfluoromethylpentane (CAS No.: 355-04-4)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
全氟己烷 / perfluorohexane (CAS No.: 355-42-0)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
氟氯碳化物 / CFCs (Chlorofluorocarbons)					
Group I					
氟氯碳化物 (Chlorofluorocarbon)-11 (CAS No.: 75-69-4)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
氟氯碳化物 (Chlorofluorocarbon)-12 (CAS No.: 75-71-8)	mg/kg		1	n.d.	-
氟氯碳化物 (Chlorofluorocarbon)-113 (CAS No.: 76-13-1)	mg/kg		1	n.d.	-
氟氯碳化物 (Chlorofluorocarbon)-114 (CAS No.: 76-14-2)	mg/kg		1	n.d.	-
氟氯碳化物 (Chlorofluorocarbon)-115 (CAS No.: 76-15-3)	mg/kg		1	n.d.	-

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

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

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

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氟氯氫碳化物 (HCFC)-262 (CAS No.: 421-02-03)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-271 (CAS No.: 430-55-7)	mg/kg		1	n.d.	-
海龍 (Halons)					
海龍 (Halon)-1211 (CAS No.: 353-59-3)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
海龍 (Halon)-1301 (CAS No.: 75-63-8)	mg/kg		1	n.d.	-
海龍 (Halon)-2402 (CAS No.: 124-73-2)	mg/kg		1	n.d.	-
溴甲烷 / Bromomethane (CAS No.: 74-83-9)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
不完全鹵化氟溴化物 / HBFCs (Hydrobromofluorocarbons)					
不完全鹵化氟溴化物 (HBFC)-21B2 (CHFBr2) (CAS No.: 1868-53-7)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
不完全鹵化氟溴化物 (HBFC)-22B1 (CHF2Br) (CAS No.: 1511-62-2)	mg/kg		1	n.d.	-
不完全鹵化氟溴化物 (HBFC)-31B1 (CH2FBr) (CAS No.: 373-52-4)	mg/kg		1	n.d.	-
不完全鹵化氟溴化物 (HBFC)-121B4 (C2HFBr4)	mg/kg		1	n.d.	-
不完全鹵化氟溴化物 (HBFC)-122B3 (C2HF2Br3)	mg/kg		1	n.d.	-
不完全鹵化氟溴化物 (HBFC)-123B2 (C2HF3Br2)	mg/kg		1	n.d.	-
不完全鹵化氟溴化物 (HBFC)-124B1 (C2HF4Br)	mg/kg		1	n.d.	-

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

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測試報告
Test Report

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

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

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

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1	限值 (Limit)
二氯甲烷 / Dichloromethane (CAS No.: 75-09-2)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
四氯乙烯 / Tetrachloroethene (CAS No.: 127-18-4)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
反-1,2-二氯乙烯 / trans-1,2-Dichloroethene (CAS No.: 156-60-5)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
反-1,3-二氯丙烯 / trans-1,3-Dichloropropene (CAS No.: 10061-02-6)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
三氯乙烯 / Trichloroethylene (CAS No.: 79-01-6)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
六氟化硫 / Sulfur Hexafluoride (SF6) (CAS No.: 2551-62-4)	mg/kg	參考US EPA 5021A (2014)，以氣相層析/質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n.d.	-
N-苯基苯胺與苯乙烯和2,4,4-三甲基戊烯的反應物 / Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene (BNST) (CAS No.: 68921-45-9)	mg/kg	參考US EPA 3550C (2007)，以氣相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	100	n.d.	-
2-(2'-羥基-3',5'-二-叔-戊基苯基)苯並三唑(紫外線吸收劑328) / 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) (CAS No.: 25973-55-1)	mg/kg	參考US EPA 3550C (2007)，以氣相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS.	5	n.d.	-

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

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

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

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

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1	限值 (Limit)
鄰苯二甲酸二(支鏈及直鏈戊基)酯 / 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (CAS No.: 84777-06-0)	mg/kg	參考IEC 62321-8 (2017)，以氣相層析儀/質譜儀檢測. / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.	-
鄰苯二甲酸二戊酯 / Di-n-pentyl phthalate (CAS No.: 131-18-0)	mg/kg		50	n.d.	-
鄰苯二甲酸正戊異戊酯 / NPIPP (N-pentyl-isopentyl phtalate) (CAS No.: 776297-69-9)	mg/kg		50	n.d.	-
氧化雙三丁基錫 / Bis(tributyltin)oxide (TBTO)*** (CAS No.: 56-35-9)	mg/kg	參考ISO 17353 (2004)，以氣相層析儀/火焰光度偵測器檢測. / With reference to ISO 17353 (2004). Analysis was performed by GC/FPD.	-	n.d.	-
鄰苯二甲酸二乙酯 / DEP (Di-ethyl phthalate) (CAS No.: 84-66-2)	mg/kg	參考IEC 62321-8 (2017)，以氣相層析儀/質譜儀檢測. / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.	-
鄰苯二甲酸二甲酯 / DMP (Di-methyl phthalate) (CAS No.: 131-11-3)	mg/kg		50	n.d.	-
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg	參考BS EN 14582 (2016)，以離子層析儀分析. / With reference to BS EN 14582 (2016). Analysis was performed by IC.	50	364	-
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	參考BS EN 14582 (2016)，以離子層析儀分析. / With reference to BS EN 14582 (2016). Analysis was performed by IC.	50	54600	-
紅磷 / Red phosphorus	**	以熱裂解-氣相層析/質譜儀分析. / Analysis was performed by Pyrolyzer-GC/MS.	-	Negative	-

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備註(Note)：

1. mg/kg = ppm；0.1wt% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n.d. = Not Detected (未檢出)
4. "-" = Not Regulated (無規格值)
5. **= Qualitative analysis (No Unit) 定性分析(無單位)
6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
7. 石綿定性分析試驗範圍： <0.1%~100%，石綿鑑定的判定基準是以檢出含有石綿纖維為『Positive』，未檢出石綿纖維為『Negative』。/ Testing range of asbestos qualitative analysis is from less than 0.1% to 100%. The judgment criterion: asbestos fibers being found is shown as "Positive"; asbestos fibers not being found is shown as "Negative".
8. ***: 該物質是由二辛基錫、單辛基錫、三丁基錫或各別元素(例如: 砷、硼、鈹)之測試結果計算得知. 其MDL是針對二辛基錫、單辛基錫、三丁基錫或元素(例如: 砷、硼、鈹)之評估. (The substance was calculated by the test results of Dioctyl Tin (DOT), MonooctylTin (MOT), Tributyl Tin (TBT) or element (Ex. Arsenic, Boron, Beryllium respectively). The MDL was evaluated for Dioctyl Tin (DOT), MonooctylTin (MOT), Tributyl Tin (TBT) or element (Ex. Arsenic, Boron, Beryllium respectively.))
9. (＊2): 水合硼酸鈉: 依照歐洲化學總署解釋以無水四硼酸二鈉數據作為代表(歐洲化學總署回信編號 Ref no.: INC 000000032519) / Tetraboron disodium heptaoxide, hydrate: Only anhydrous form of disodium tetraborate is relevant and considered according to ECHA explanation (Ref no.: INC 000000032519).
10. 參數換算表 / Parameter Conversion Table：http://twap.sgs.com/sgsrsts/chn/download-REACH_tw.asp
11. (※2): 被萃取出的溶出硼/砷是以感應耦合電漿原子發射光譜儀檢測得之. / The extracted soluble Boron / Arsenic are detected by ICP-AES.
12. 鈹青銅是一種主要成份為鈹及銅的合金, 當偵測不到總鈹含量時, 亦表示不含鈹青銅.
(Since beryllium copper is a metal alloy of copper and beryllium and the test result is n.d. for beryllium, we can have conclusion that the beryllium copper is n.d..)

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

PFOS濃度在物質或製備中不得超過0.001%(10ppm)，在半成品、成品或零部件中不得超過0.1%(1000ppm)，在紡織品或塗層材料中不得超過1μg/m²。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1 μg/m².)

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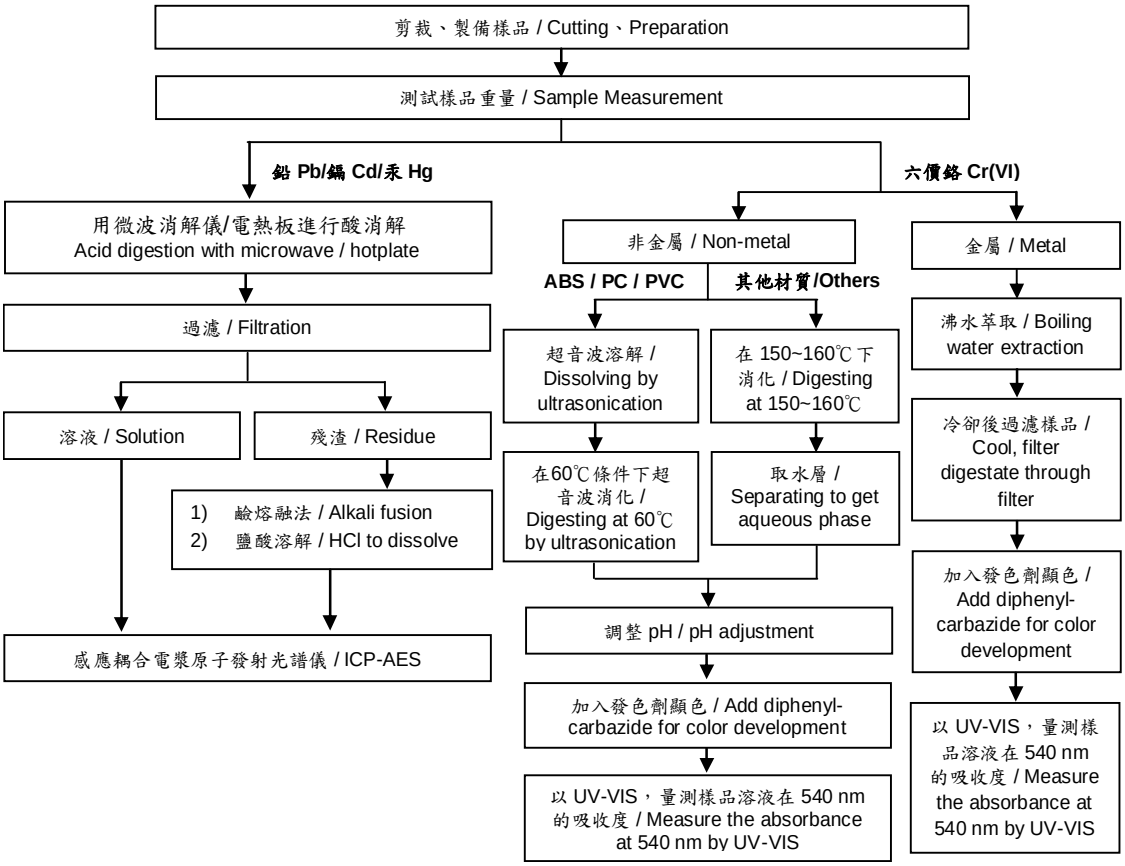
重金屬流程圖 / Analytical flow chart of Heavy Metal

根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外)
These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)

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



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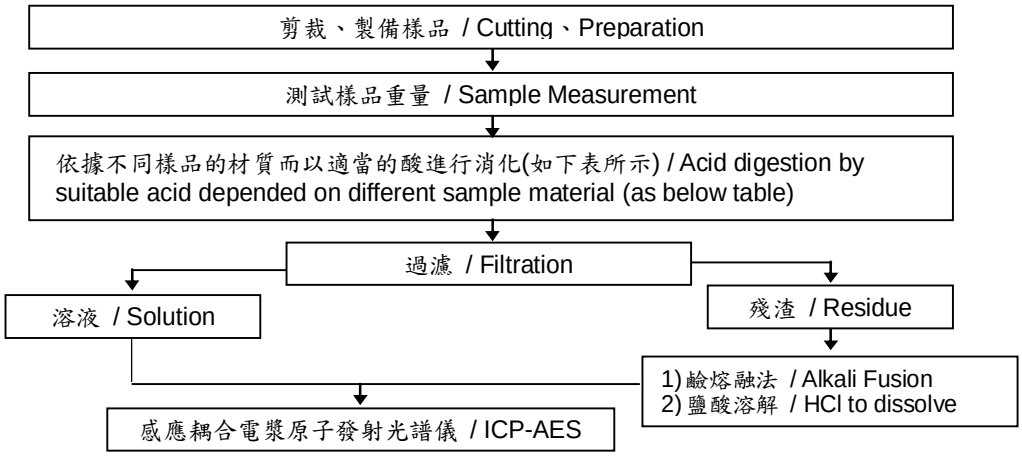
根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.

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

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



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 / Aqua regia, HNO_3, HCl, HF, H_2O_2
玻璃 / Glass	硝酸,氫氟酸 / HNO_3/HF
金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO_3
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H_2SO_4, H_2O_2, HNO_3, HCl
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion

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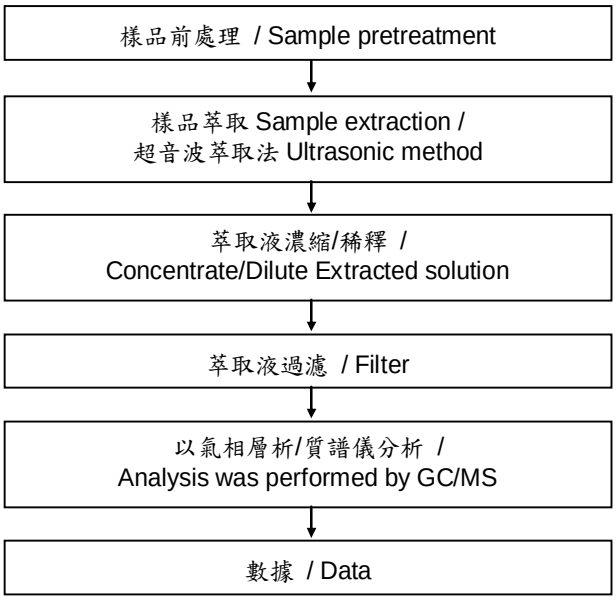
分析流程圖 / Analytical flow chart

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

【富馬酸二甲酯(DMFU)、六溴環十二烷(HBCDD)、乙二醇醚及其酯類(Ethylene glycol ether)、BNST】



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測試報告
Test Report

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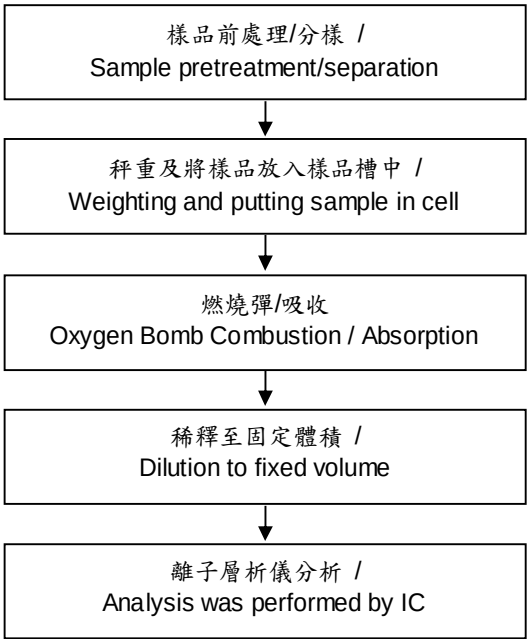
鹵素分析流程圖 / Analytical flow chart - Halogen

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



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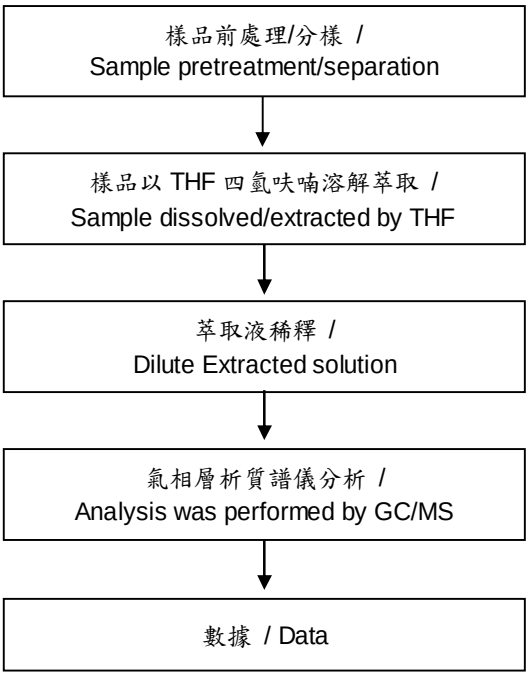
可塑劑分析流程圖 / Analytical flow chart - Phthalate

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

【測試方法/Test method: IEC 62321-8】



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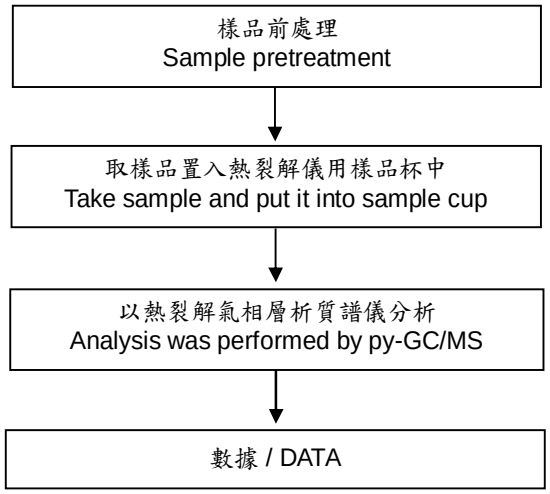
紅磷分析流程 / Analytical flow chart - Red phosphorus

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



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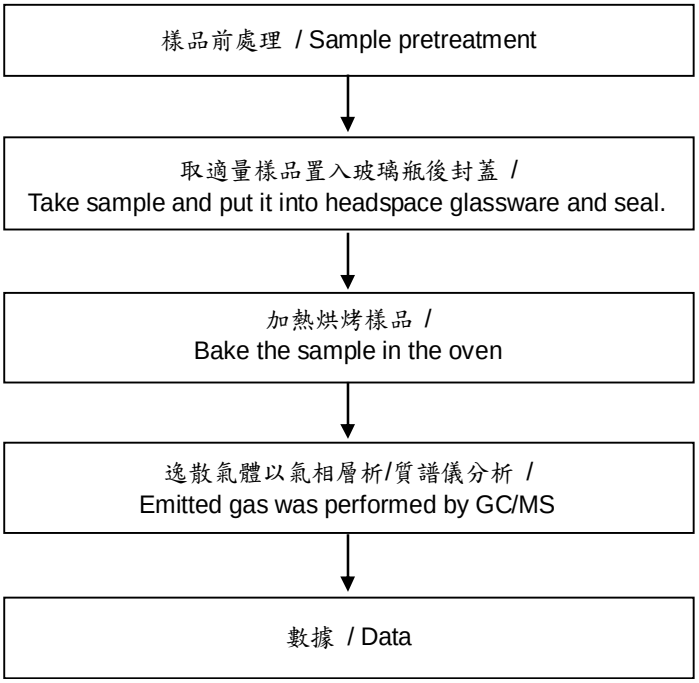
揮發性有機化合物分析流程圖 /
Analytical flow chart - volatile organic compounds (VOCs)

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

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



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Test Report

號碼(No.) : CE/2017/C0524　　日期(Date) : 2017/12/15　　頁數(Page): 32 of 39

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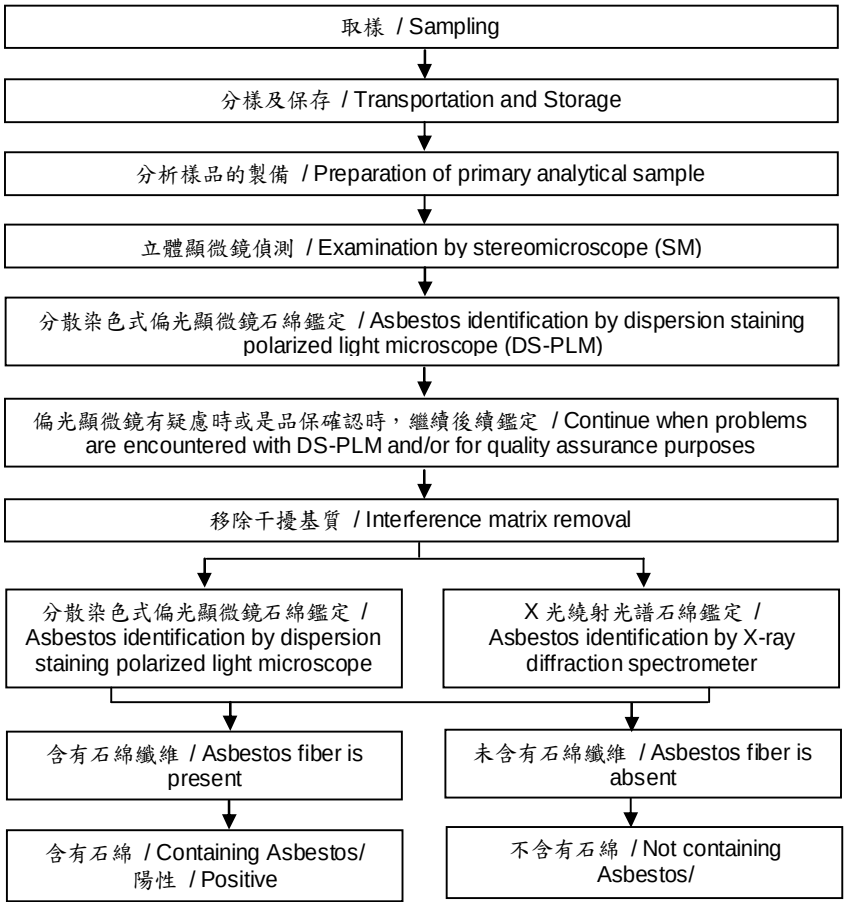
石綿鑑定分析流程圖 / Analysis flow chart for determination of Asbestos

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

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



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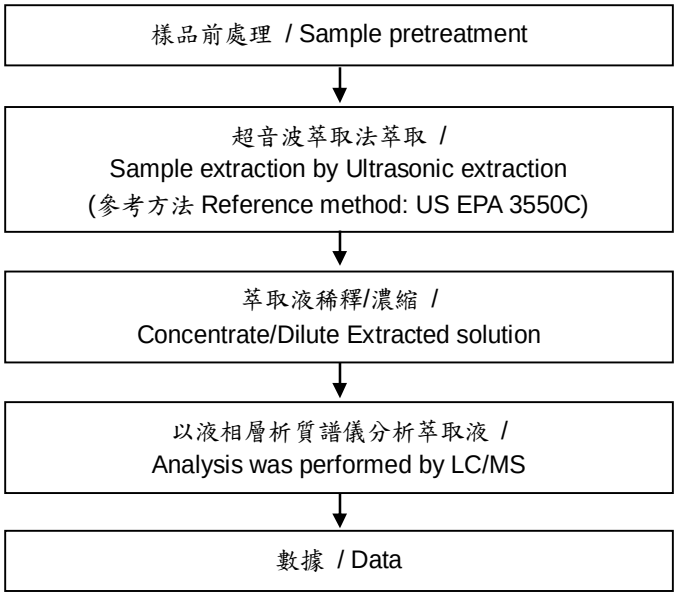
全氟辛酸/全氟辛烷磺酸分析流程圖 / Analytical flow chart - PFOA/PFOS

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



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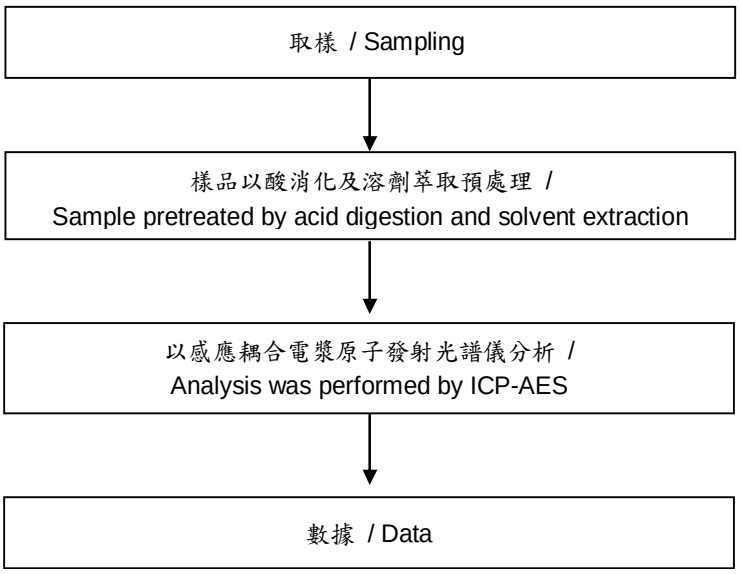
二氯化鈷分析流程圖 / Analytical flow chart - Cobalt dichloride

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



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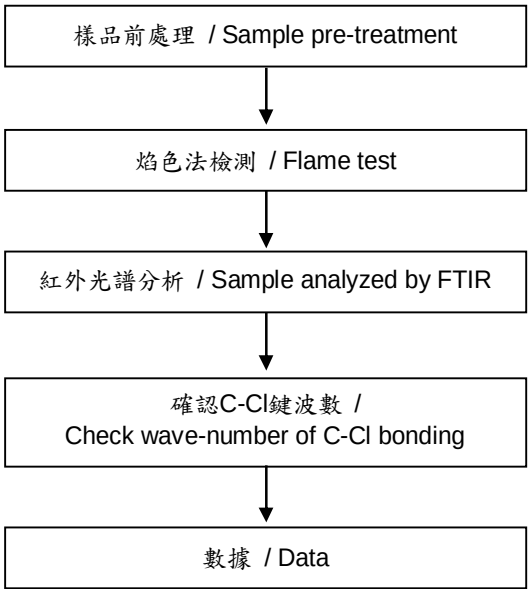
聚氯乙烯物質判定分析流程圖 / Analysis flow chart - PVC

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



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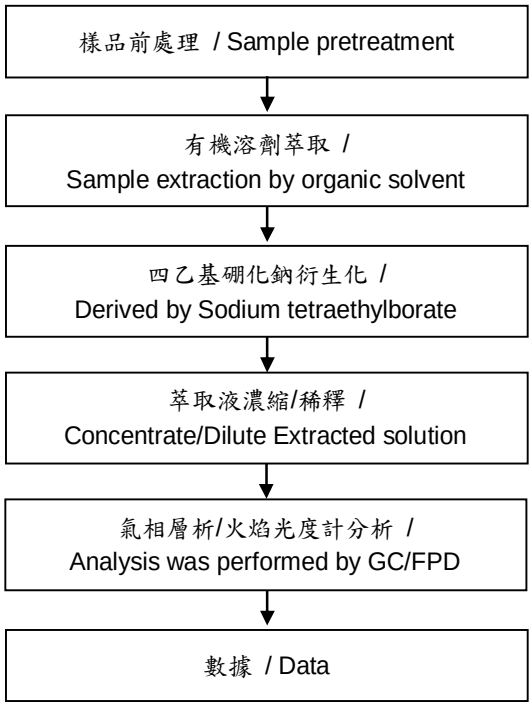
有機錫分析流程圖 / Analytical flow chart - Organic-Tin

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



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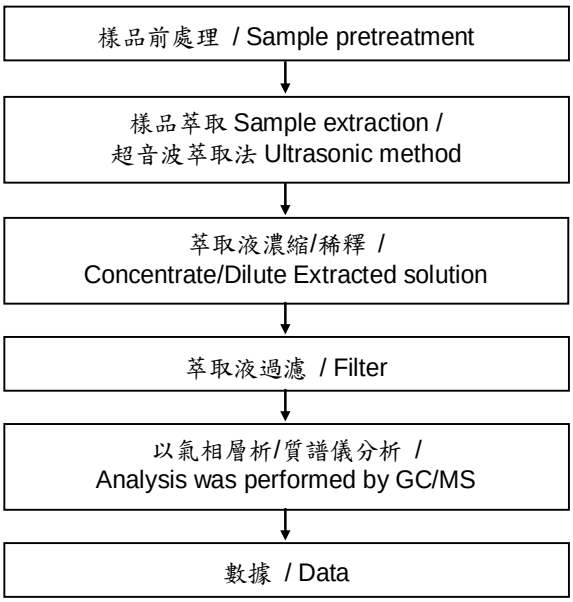
分析流程圖 / Analytical flow chart

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

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



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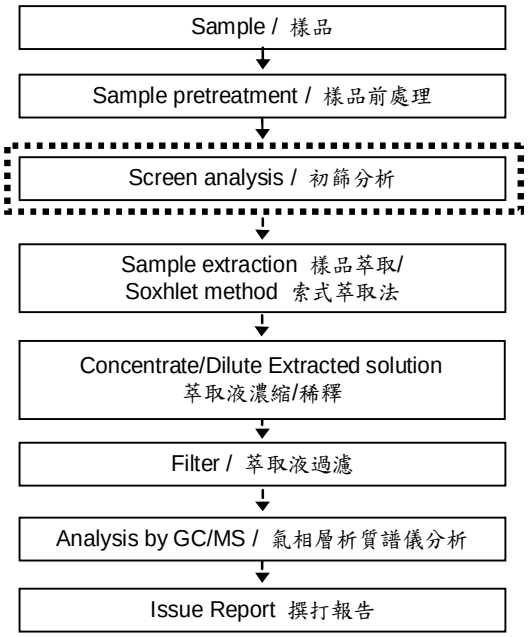
(南亞電子材料(昆山)有限公司 / NAN YA ELECTRONIC MATERIALS (KUNSHAN) CORP., LTD.)
(南亞電子材料(惠州)有限公司 / NAN YA ELECTRONIC MATERIALS (HUIZHOU) CORP., LTD.)
台灣台北市敦化北路201號 / 201 TUNG HWA NORTH ROAD, TAIPEI, TAIWAN
(江蘇省昆山昆山市長江南路201號 / 201 CHANG JIANG ROAD(S) KUNSHAN ECONOMIC & TECHNICAL DEVELOPMENT ZONE, JIANG SU)
(廣東省惠州市博羅縣石灣鎮永石大道 / YONGSHI BOULEVARD SHIWAN TOWN BOLUO COUNTY HUIZHOU CITY GUANG DONG)

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

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

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



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測試報告
Test Report

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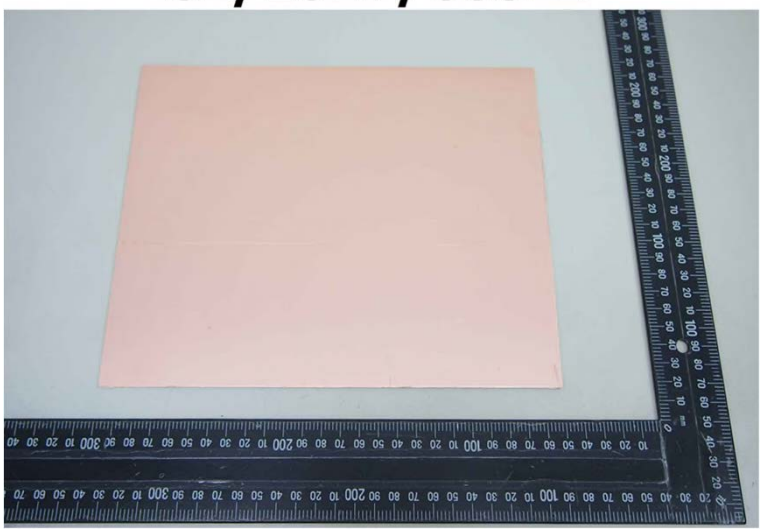
(廣東省惠州市博羅縣石灣鎮永石大道 / YONGSHI BOULEVARD SHIWAN TOWN BOLUO COUNTY HUIZHOU CITY GUANG DONG)

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

CE/2017/C0524



** 報告結尾 (End of Report) **

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Test Report

SHENZHEN YICHENG ELECTRONIC TECHNOLOGY CO.,LTD.

4J/4H XIANJI BUILDING,BAOMING ROAD 2,XIXIANG BAOAN, SHENZHEN CITY
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Use for nickel YC-51A/YC-51-1A/YC-51-2A/YC-51-3A

SGS Job No. :	CP17-027516 - SZ
Date of Sample Received :	22 May 2017
Testing Period :	22 May 2017 - 25 May 2017
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Alkene Liang
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN17-092917.003	Green liquid

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.
(2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.
(3)With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.
(4)With reference to IEC 62321-7-2:2017, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis and/or with reference to IEC 62321-5:2013, determination of Chromium by ICP-OES.
(5)With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.
(6)With reference to IEC 62321-8:2017, determination of phthalates by GC-MS.

Test Item(s)	Limit	Unit	MDL	*003*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory

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Test Item(s)	Limit	Unit	MDL	*003*
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP_ORG_ID,FSP_LANG_ID:1258637,25.

(2) The result of Hexavalent Chromium (Cr(VI)) is "ND" as the result of Chromium (Cr) is "ND", and confirmation test of Hexavalent Chromium (Cr(VI)) is not required.

(3) If the Chromium (Cr) content is greater than the MDL of Hexavalent Chromium (Cr(VI)). And confirmation test of Hexavalent Chromium (Cr(VI)) is required.

Remark: The result(s) shown is/are of the total weight of wet sample.

检验检测专用章 Inspection & Testing Services

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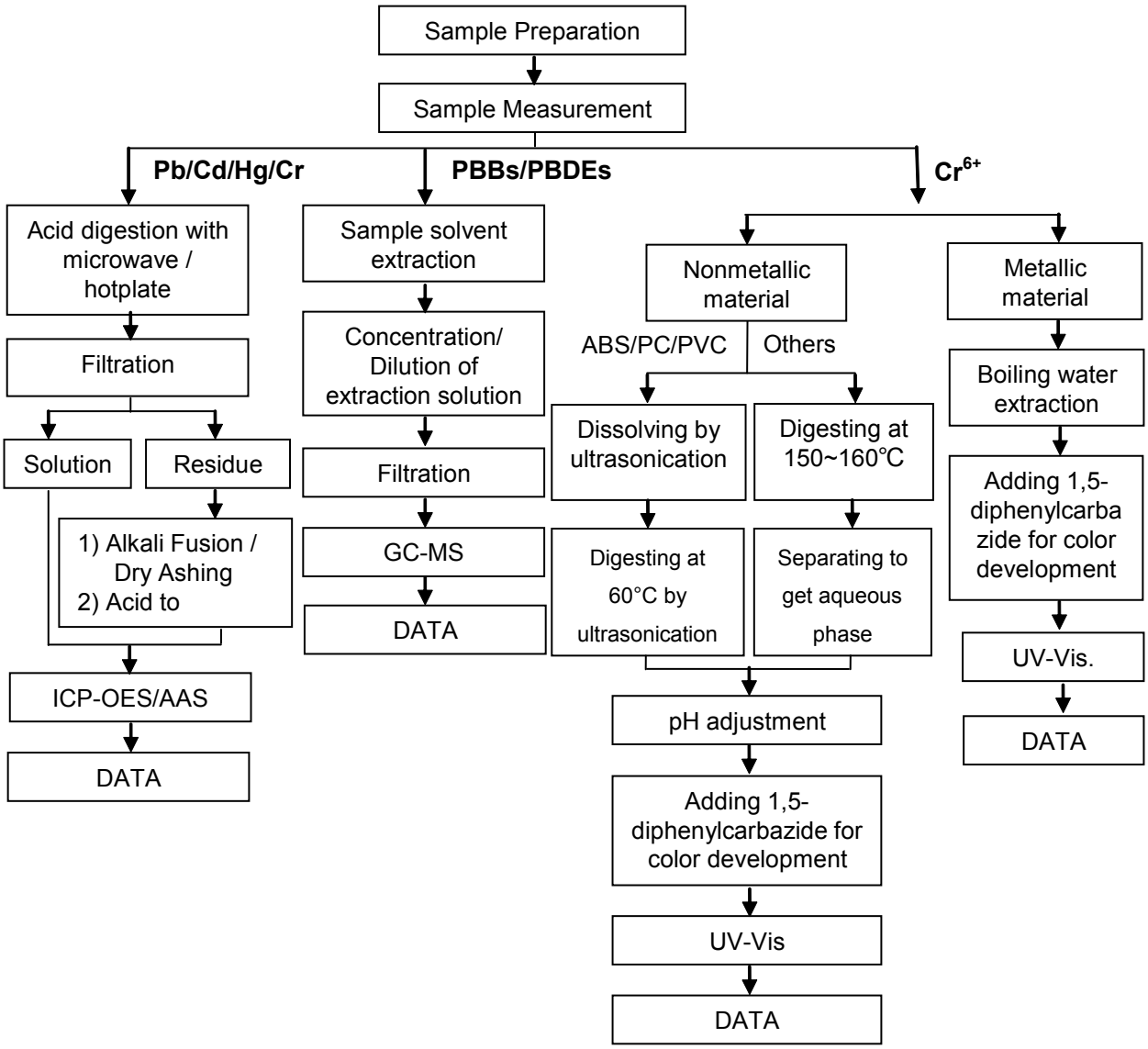
ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Edith Zhang / Sunny Hu
2) Name of the person in charge of testing: Bella Wang / Qiong Liu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded).



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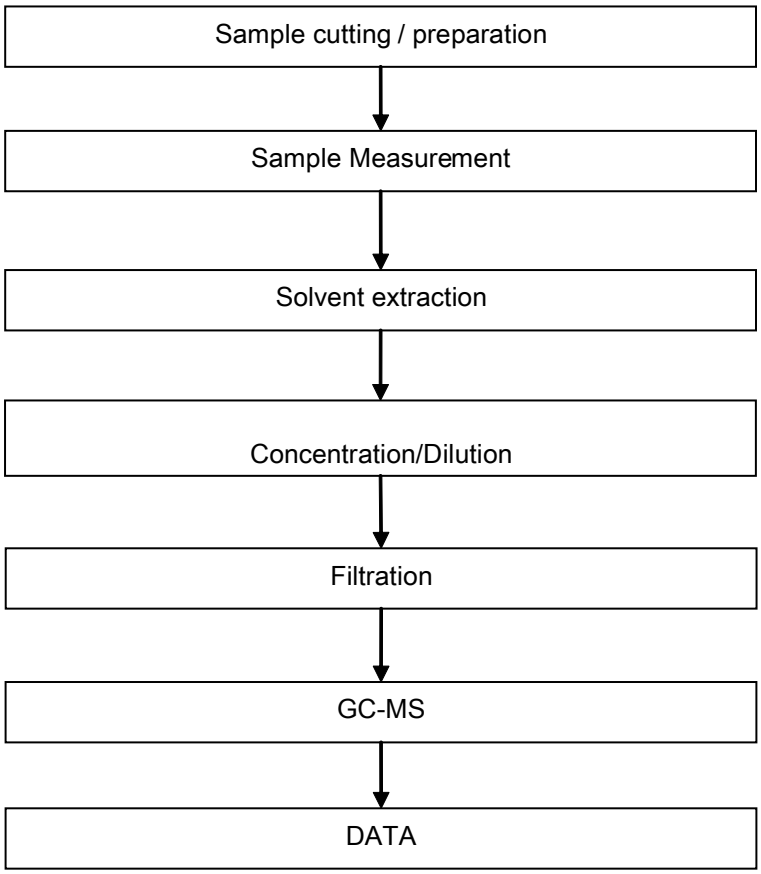
ATTACHMENTS

Phthalates Testing Flow Chart

1) Name of the person who made testing: Sunny Hu
2) Name of the person in charge of testing: Qiong Liu



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Sample photo:

CAN17-092917.003

SGS authenticate the photo on original report only

*** End of Report ***

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检测报告
Test Report

报告编号 A2180018420101022E
Report No. A2180018420101022E

申请单位 湖南利尔电子材料有限公司
Applicant HUNAN LIER ELECTRONIC MATERIALS CO.,LTD
地 址 湖南省长沙市国家生物医药园产业基地
Address CHANGSHA NATIONAL BIOMEDICAL INDUSTRIAL BASE .HUNAN

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 client

样品名称	抗氧化剂
Sample Name	Organic Solderability Preservatives
样品型号	PA-300DT
Part No.	PA-300DT
样品接收日期	2018.02.26
Sample Received Date	Feb. 26, 2018
样品检测日期	2018.02.26-2018.03.05
Testing Period	Feb. 26, 2018 to Mar. 5, 2018

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)，氟(F)，氯(Cl)，溴(Br)，碘(I)，全氟辛烷磺酸(PFOS)，全氟辛烷酸(PFOA)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), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Perfluorooctane Sulfonates (PFOS), Perfluorooctanoic Acid (PFOA) 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).

主 检 Tested by
批 准 Approved by 郑晴涛
郑晴涛
技术经理 Technical Manager

审 核 Reviewed by 方煜松
日 期 Date 2018.03.05

No. R294341993

检测报告
Test Report

****

结论 Conclusion

测试样品 Tested Sample	依据指令 According to directive	结果 Result
提交样品 Submitted Sample	欧盟RoHS指令2011/65/EU及其修订指令(EU) 2015/863 RoHS Directive 2011/65/EU with amendment (EU) 2015/863	符合 Pass

****

符合表示检测结果满足欧盟RoHS指令2011/65/EU及其修订指令(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.

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	ICP-OES
六价铬 Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017和/或IEC 62321-5:2013 测试总铬含量 IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
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
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
全氟辛烷磺酸 Perfluorooctane Sulfonates (PFOS)	参考US EPA 3550C:2007 & US EPA 8321B:2007 Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS
全氟辛烷酸 Perfluorooctanoic Acid (PFOA)	参考US EPA 3550C:2007 & US EPA 8321B:2007 Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS

检测报告
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检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL	限值 Limit
铅 Lead(Pb)	N.D.	2 mg/kg	1000 mg/kg
镉 Cadmium(Cd)	N.D.	2 mg/kg	100 mg/kg
汞 Mercury(Hg)	N.D.	2 mg/kg	1000 mg/kg
六价铬 Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg	1000 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL	限值 Limit
多溴联苯 Polybrominated Biphenyls(PBBs)			
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg	1000 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	限值 Limit
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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检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL	限值 Limit
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	1000 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	1000 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	1000 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg	1000 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
氟 Fluorine(F)	N.D.	10 mg/kg
氯 Chlorine(Cl)	200 mg/kg	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
全氟辛烷磺酸 Perfluorooctane Sulfonates(PFOS)	N.D.	0.01 mg/kg

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

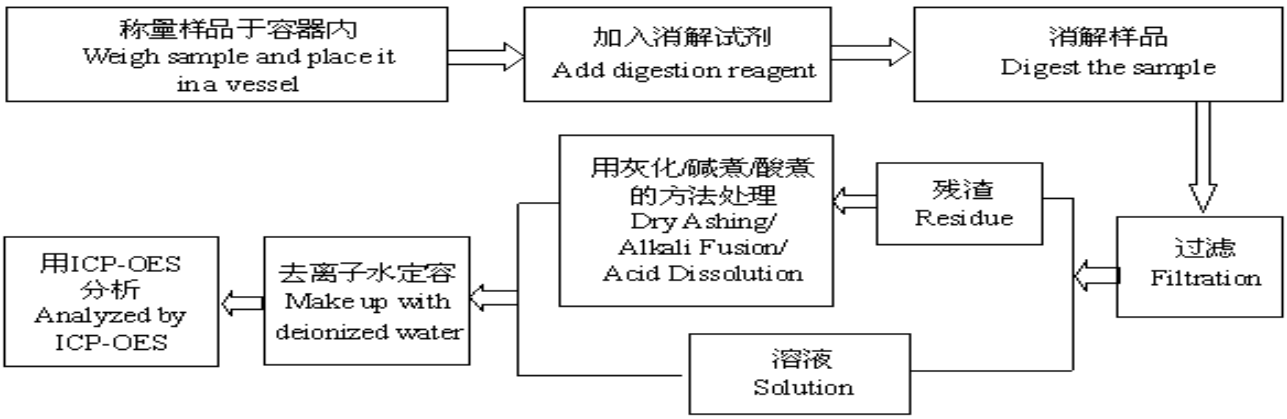
测试样品/部位描述 浅蓝色液体
Tested Sample/Part Description Light blue liquid

备注: **对于检测铅，镉，汞之样品已完全溶解。**
-N.D. = 未检出（小于方法检出限）
-mg/kg = ppm = 百万分之一
-1000 mg/kg = 0.1%

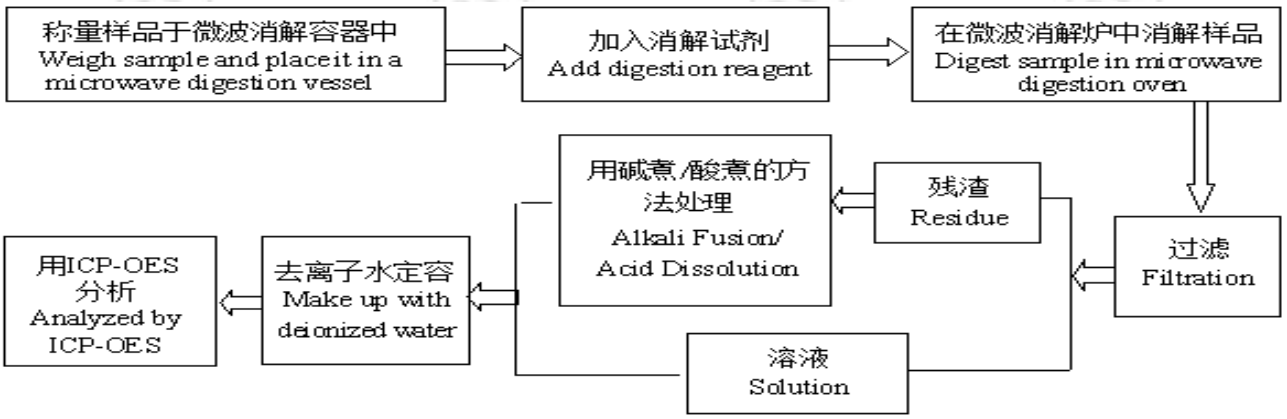
Remark: **The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.**
-MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million
-1000 mg/kg = 0.1%

检测流程 Test Process

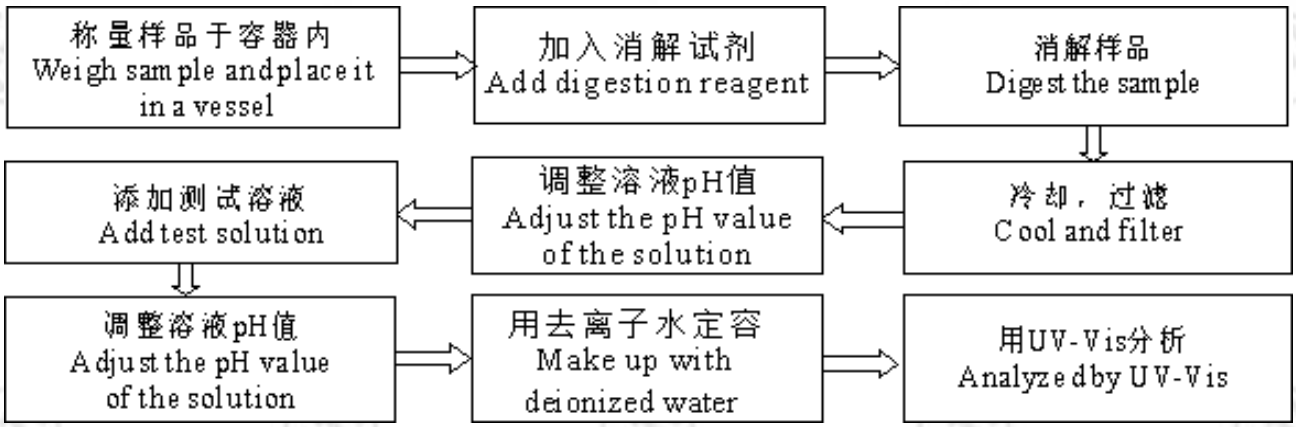
1. 铅(Pb)，镉(Cd)，铬(Cr)
   Lead(Pb), Cadmium(Cd), Chromium(Cr)



2. 汞(Hg)
   Mercury(Hg)

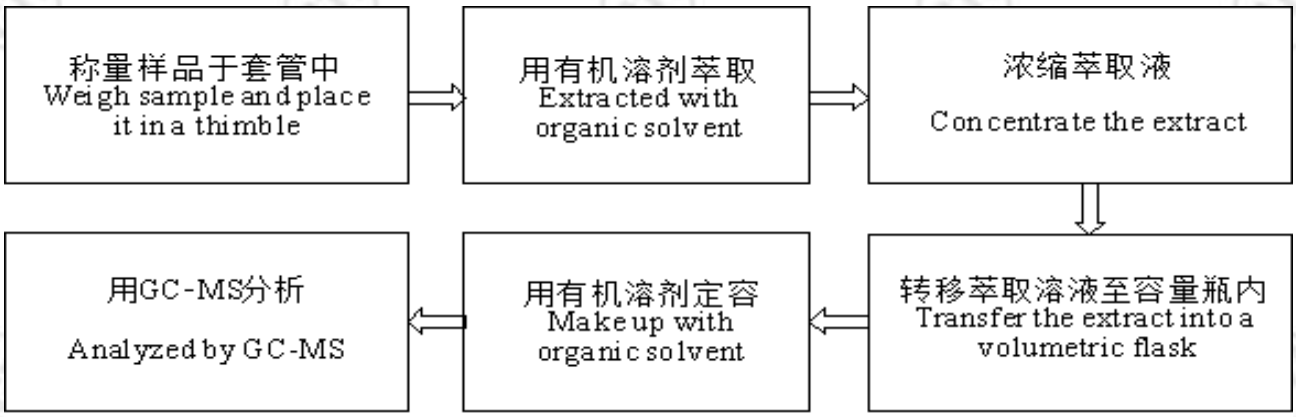


3. 六价铬(Cr(VI))
   Hexavalent Chromium(Cr(VI))



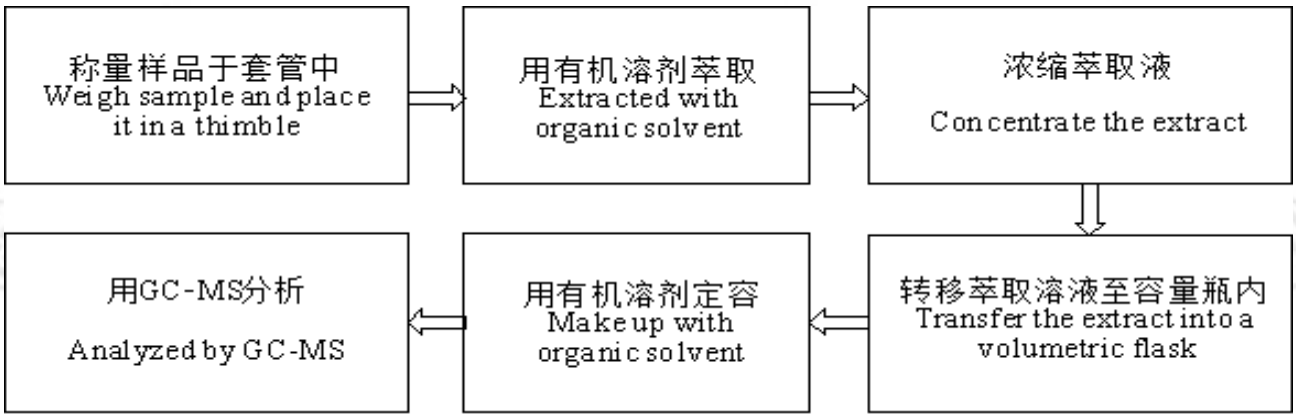
4. 多溴联苯(PBBs)， 多溴二苯醚(PBDEs)

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



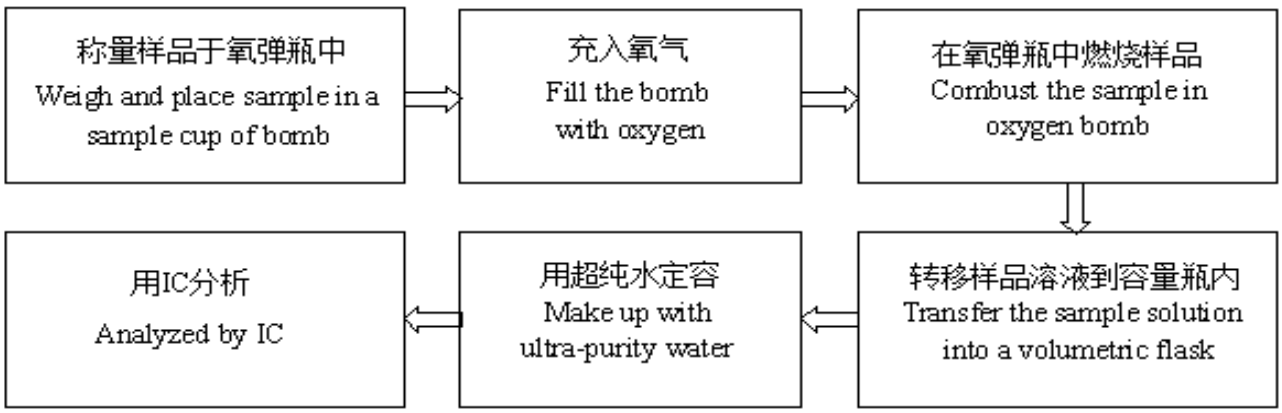
5. 邻苯二甲酸酯(DBP， BBP， DEHP， DIBP)

Phthalates (DBP, BBP, DEHP, DIBP)



6. 氟(F)， 氯(Cl)， 溴(Br)， 碘(I)

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



检测报告
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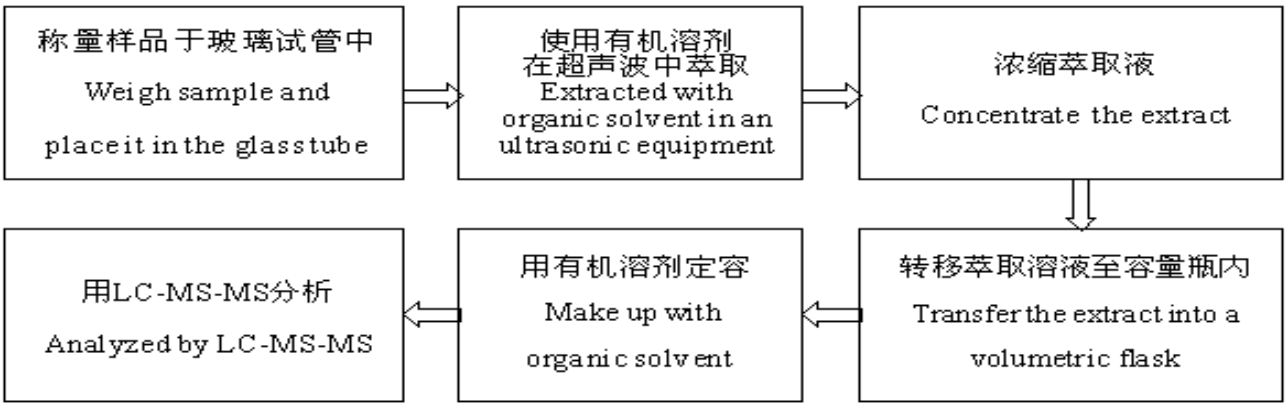
7. 全氟辛烷磺酸(PFOS)， 全氟辛烷酸(PFOA)
Perfluorooctane Sulfonates (PFOS), Perfluorooctanoic Acid (PFOA)



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Test Report

样品图片
Photo(s) of the sample(s)

报告结束

*** End of report ***

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；
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   The sample(s) and sample information was/were provided by the client who should be responsible for the autenticity which CTI hasn’t verified;
3. 本报告检测结果仅对送测样品负责；
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HONGDA ELECTRONIC EQUIPMENT CO., LTD

E SIDE OF SHAYUAN ROAD LONGQI VILLAGE,SHAWAN TOWN,PANYU,GUANGZHOU,CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as :
Liquid Photo imadeable Solder Mask

SGS Job No. :	GZIN1709043003PC - GZ
Client Ref. Info. :	HD-500BKE,BKME/HD-500H1 MIXTURE
Date of Sample Received :	06 Sep 2017
Testing Period :	06 Sep 2017 - 12 Sep 2017
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Echo

Echo Yeung
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN17-178286.001	Black liquid

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013 , IEC62321-5:2013, IEC62321-7-2:2017 , IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	*001*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND

检验检测专用章 Inspection & Testing Services

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Test Item(s)	Limit	Unit	MDL	001
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	70
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP_ORG_ID,FSP_LANG_ID:1258637,25

Halogen

Test Method : With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	Unit	MDL	001
Fluorine (F)	mg/kg	50	149
Chlorine (Cl)	mg/kg	50	206
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

Elementary Analysis

Test Method : With reference to US EPA method 3050B:1996,analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	001
Antimony (Sb)	mg/kg	10	ND
Beryllium (Be)	mg/kg	5	ND
Arsenic (As)	mg/kg	10	ND

Hexabromocyclododecane (HBCDD)

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Test Method : With reference to IEC 62321:2008, analysis was performed by GC-MS.

Test Item(s)	Unit	MDL	*001*
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

Phthalate

Test Method : With reference to EN14372: 2004. Analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	001
Dibutyl Phthalate (DBP)	84-74-2	%(w/w)	0.003	0.007
Benzylbutyl Phthalate (BBP)	85-68-7	%(w/w)	0.003	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(w/w)	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 / 68515-48-0	%(w/w)	0.010	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%(w/w)	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 / 68515-49-1	%(w/w)	0.010	ND
Dimethyl Phthalate (DMP)	131-11-3	%(w/w)	0.003	ND
Diethyl Phthalate (DEP)	84-66-2	%(w/w)	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%(w/w)	0.003	ND
Dinonyl Phthalate (DNP)	84-76-4	%(w/w)	0.003	ND
Diisooctyl Phthalate (DIOP)	27554-26-3	%(w/w)	0.010	ND
Dipropyl Phthalate (DPrP)	131-16-8	%(w/w)	0.003	ND
Dicyclohexyl Phthalate (DCHP)	84-61-7	%(w/w)	0.003	ND
Di-n-pentyl Phthalate (DnPP)	131-18-0	%(w/w)	0.003	ND
Dibenzyl Phthalate (DBzP)	523-31-9	%(w/w)	0.003	ND
Diphenyl Phthalate (DPhP)	84-62-8	%(w/w)	0.003	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%(w/w)	0.003	ND
Diallyl Phthalate (DAP)	131-17-9	%(w/w)	0.003	ND
n-decyl, n-octyl Phthalate (nDnOP)	119-07-3	%(w/w)	0.003	ND
Bis(2-methoxyethyl) Phthalate (DMEP)	117-82-8	%(w/w)	0.003	ND
Diisopentyl Phthalate (DIPP)	605-50-5	%(w/w)	0.003	ND
Di-n-decyl Phthalate (DnDP)	84-77-5	%(w/w)	0.003	ND

Notes :

(1)DBP,BBP,DEHP Reference information： Entry 51 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC)：

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i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles.
ii) Toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.
Please refer to Regulation (EC) No 552/2009 to get more detail information
(2)DINP, DNOP, DIDP Reference information： Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.
ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.
Please refer to Regulation (EC) No 552/2009 to get more detail information

PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS.

Test Item(s)	CAS NO.	Unit	MDL	001
Perfluorooctane Sulfonates (PFOS)^	-	mg/kg	10	ND
Perfluorooctanoic acid (PFOA)	335-67-1	mg/kg	10	ND

Notes :

(1) ^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluoroctanesulfonic acid, Perfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamide, N-Ethylperfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamidoethanol and N-Ethylperfluoroctane sulfonamidoethanol.

Remark : The result(s) shown is/are of the total weight of wet sample.

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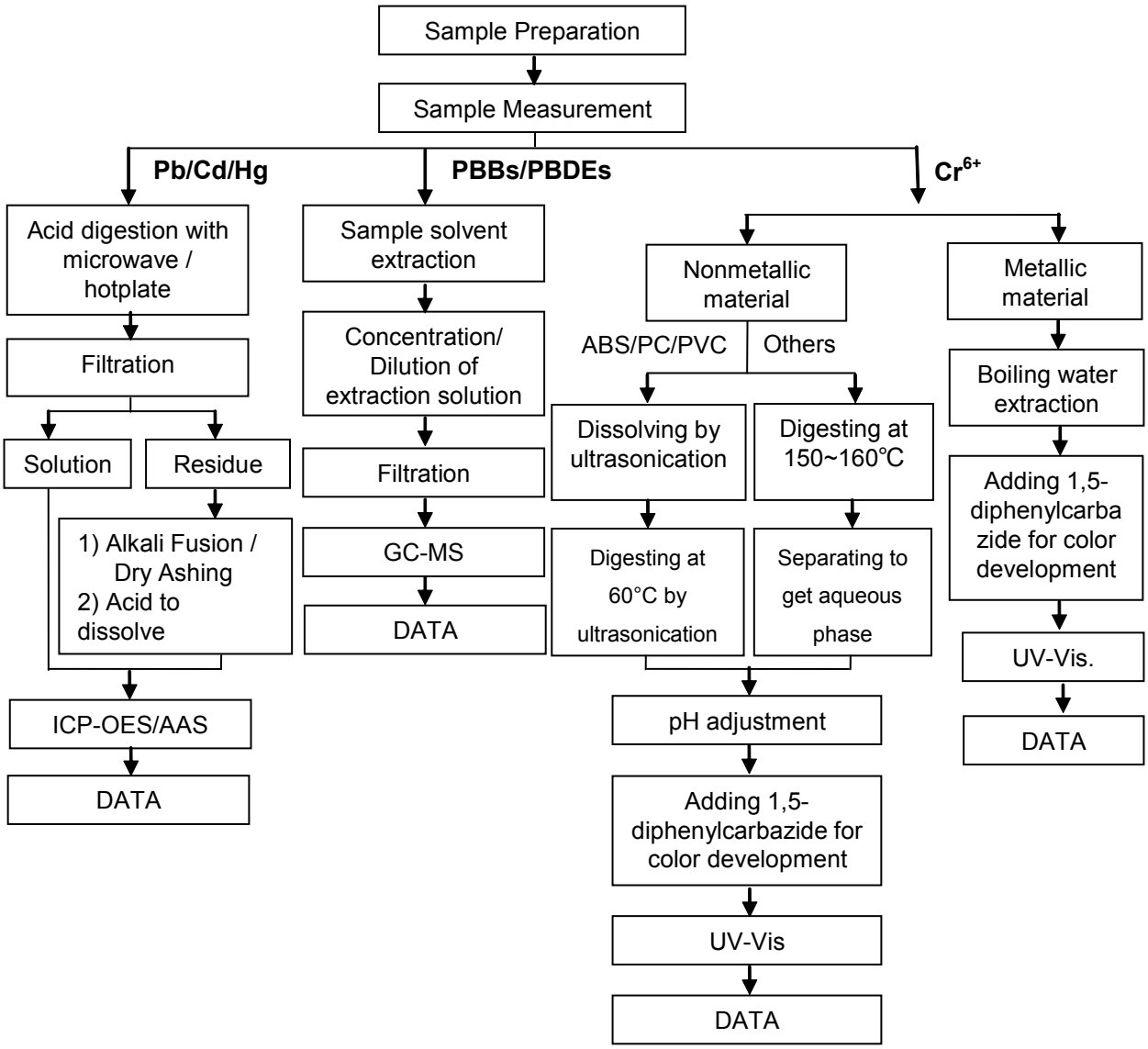
Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs Testing Flow Chart

1) Name of the person who made testing: Edith Zhang / Sunny Hu
2) Name of the person in charge of testing: Bella Wang / Qiong Liu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded).



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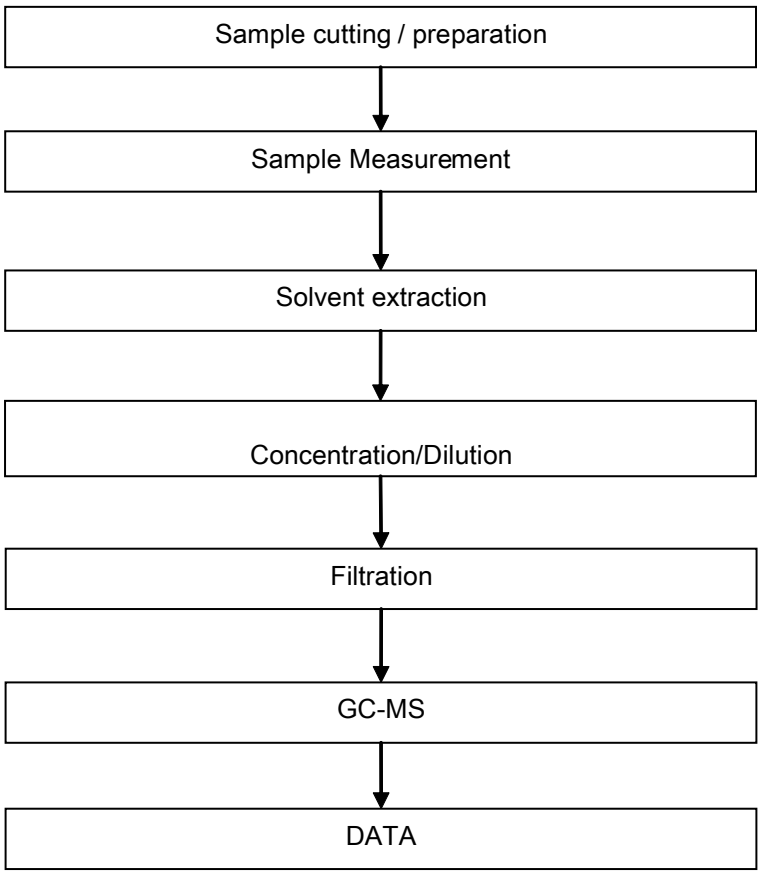
Phthalates Testing Flow Chart

1) Name of the person who made testing: Sunny Hu
2) Name of the person in charge of testing: Qiong Liu



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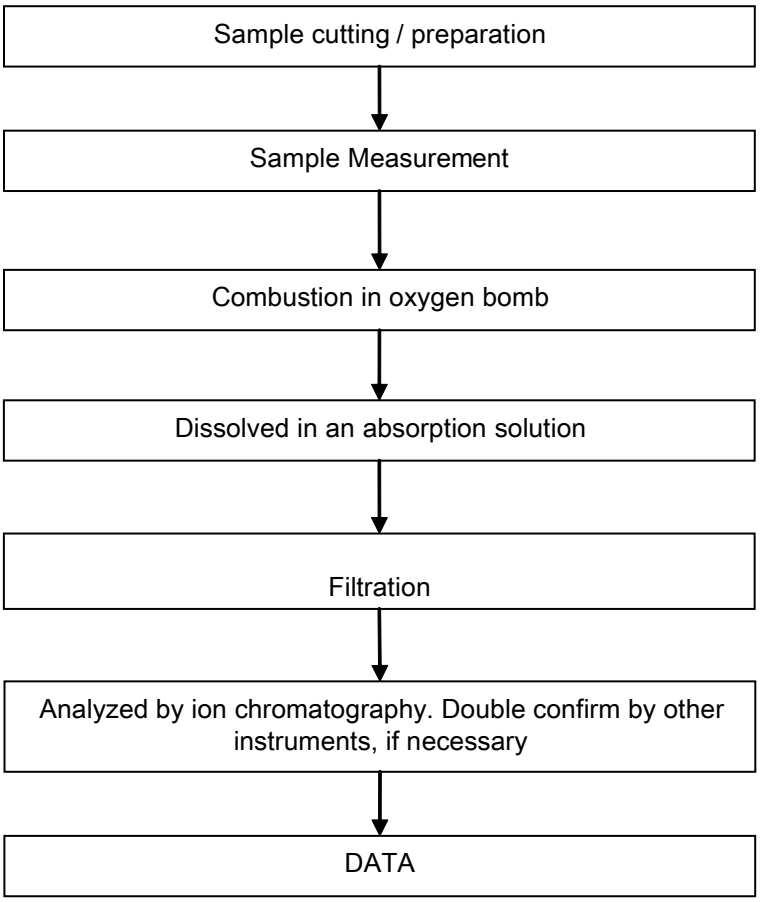
Halogen Testing Flow Chart

1) Name of the person who made testing: Bruce Xiao
2) Name of the person in charge of testing: Bella Wang



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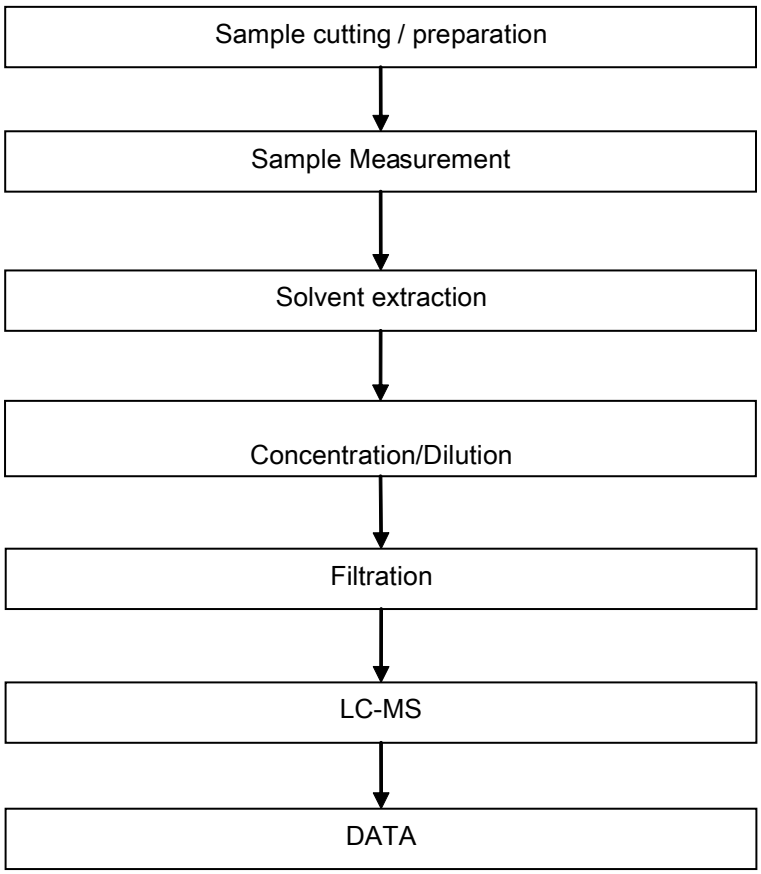
PFOA / PFOS Testing Flow Chart

1) Name of the person who made testing: Zhihong Wang
2) Name of the person in charge of testing: Qiong Liu



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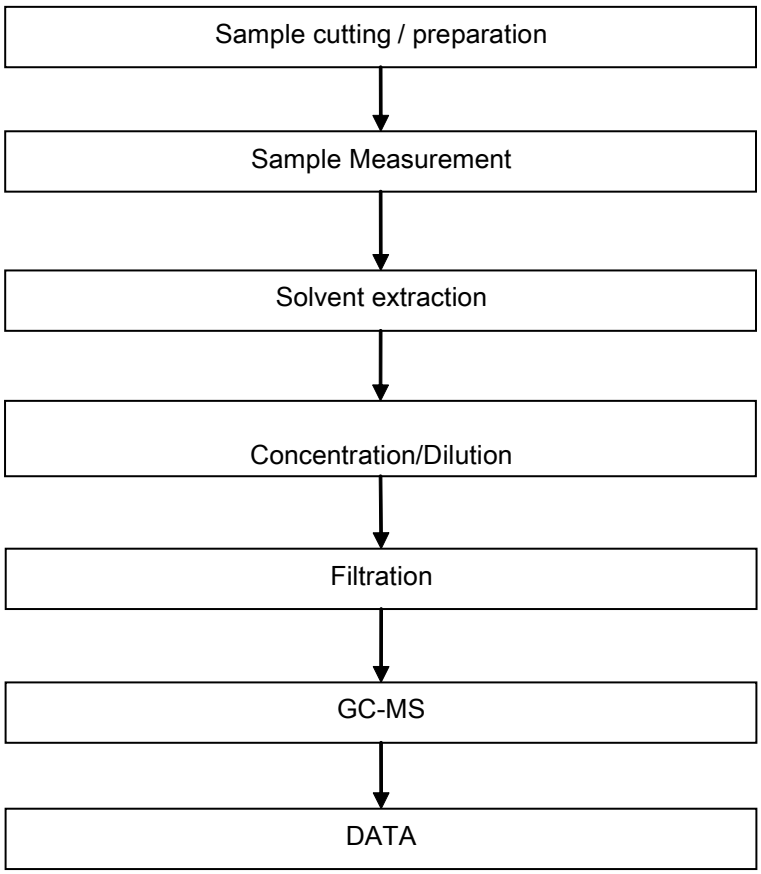
HBCDD Testing Flow Chart

1) Name of the person who made testing: Sunny Hu
2) Name of the person in charge of testing: Qiong Liu



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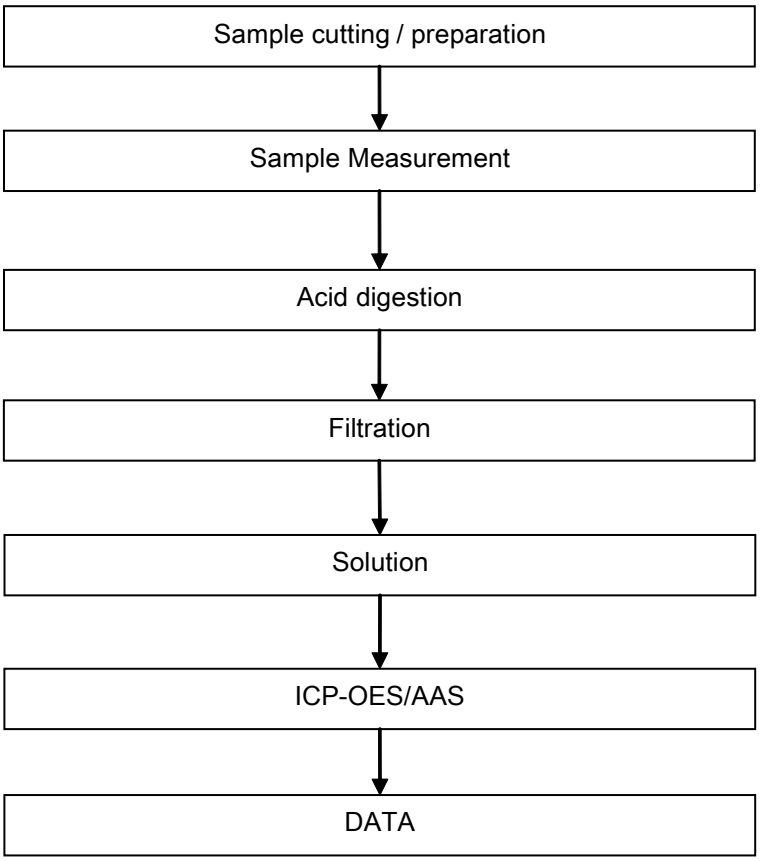
Elementary Testing Flow Chart

1) Name of the person who made testing: Edith Zhang
2) Name of the person in charge of testing: Bella Wang



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Sample photo:

CAN17-178286.001

SGS authenticate the photo on original report only

*** End of Report ***

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CHANGZHOU HENGFENG SPECIAL CONDUCTOR CO., LTD.

26 FENGHUANG ROAD, CHANGZHOU CITY

The following sample(s) was/were submitted and identified on behalf of the clients as : SILVER-COATED COPPER WIRE

SGS Job No. :	SP18-004187 - SH
Composition :	Cu、Ag
Date of Sample Received :	06 Feb 2018
Testing Period :	06 Feb 2018 - 14 Feb 2018
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

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

Helen Liu
Approved Signatory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA18-029047.005	Copper metal(base)
SN2	SHA18-029047.006	Silvery metal(plating)

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

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

Test Item(s)	Limit	Unit	MDL	*005*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▾	-	µg/cm²	0.10	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND

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Test Item(s)	Limit	Unit	MDL	*005*
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND
Di-2-Ethyl Hexyl Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1)The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2)▾ = a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
c. The result between 0.10 µg/cm² and 0.13 µg/cm² 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.

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013 and IEC62321-7-1:2015, analyzed by ICP-OES and UV-Vis .

Test Item(s)	Limit	Unit	MDL	*006*
Cadmium (Cd)	100	mg/kg	10	ND
Lead (Pb)	1000	mg/kg	10	ND
Mercury (Hg)	1000	mg/kg	10	ND
Hexavalent Chromium (Cr(VI))▾	-	µg/cm²	0.10	ND

Notes :

(1)The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
IEC 62321 series is equivalent to EN 62321 series

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(2)▼ = a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
c. The result between 0.10 µg/cm² and 0.13 µg/cm² 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.

Element(s)

Test Method : With reference to US EPA Method 3050B:1996, analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	*005*
Antimony (Sb)	mg/kg	10	ND
Beryllium (Be)	mg/kg	5	ND

PFOS (Perfluorooctane Sulfonates)

Test Method : With reference to US EPA 3550C: 2007, analysis was performed by HPLC-MS.

Test Item(s)	Limit	Unit	MDL	006
Perfluorooctanesulfonate (PFOS)^	1000	mg/kg	10	ND

Notes :

(1) Max. limit specified by commission regulation (EU) No. 757/2010 amending regulation (EC) No 850/2004
(2)^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluoroctanesulfonic acid, Perfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamide, N-Ethylperfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamidoethanol and N-Ethylperfluoroctane sulfonamidoethanol.

Benzenamine,N-phenyl-,Reaction Products with Styrene and 2,4,4-Trimethylpentene (BNST)

Test Method : With reference to EPA method 3550C:2007 & EPA method 8270D: 2014, analysis was performed by GC-MS.

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Test Item(s)	CAS NO.	Unit	MDL	*005*
Benzenamine,N-phenyl-,Reaction Products with Styrene and 2,4,4-Trimethylpentene (BNST)	68921-45-9	mg/kg	10	ND

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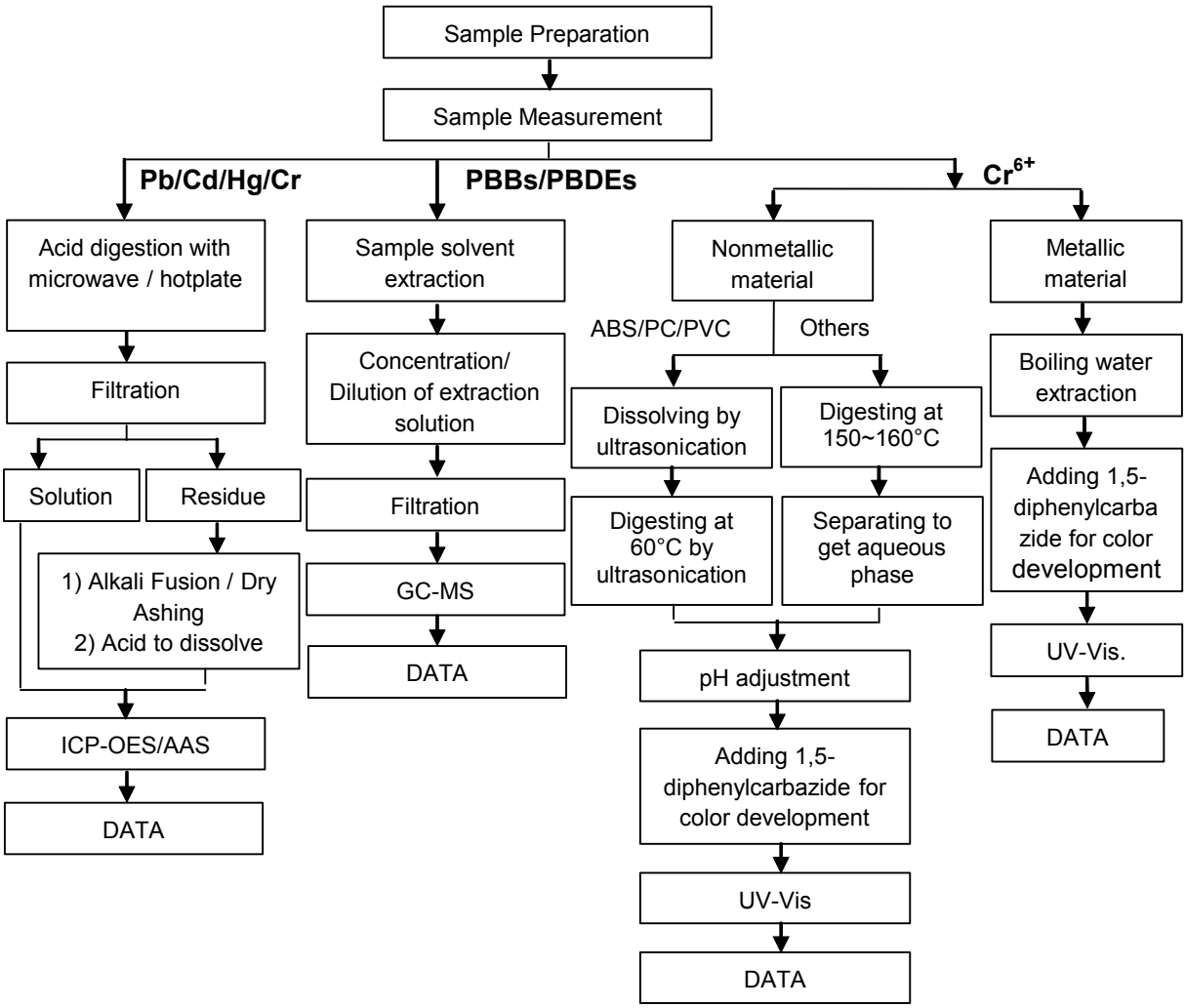
Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs Testing Flow Chart

1) Name of the person who made testing: Meria Jin/Gary Xu/ Xiaolong Yang/Sielina Song
2) Name of the person in charge of testing: Jan Shi/Myra Ma/Luna Xu/Shara Wang
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded)



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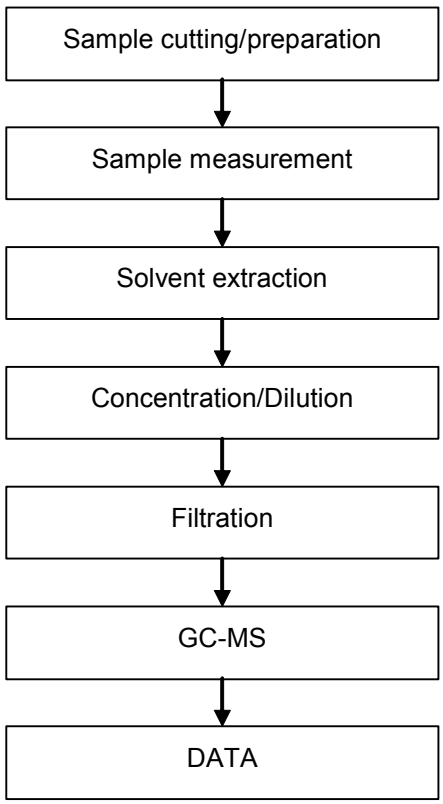
Phthalates Testing Flow Chart

1) Name of the person who made testing: Sherlock Gao
2) Name of the person in charge of testing: Jessy Huang



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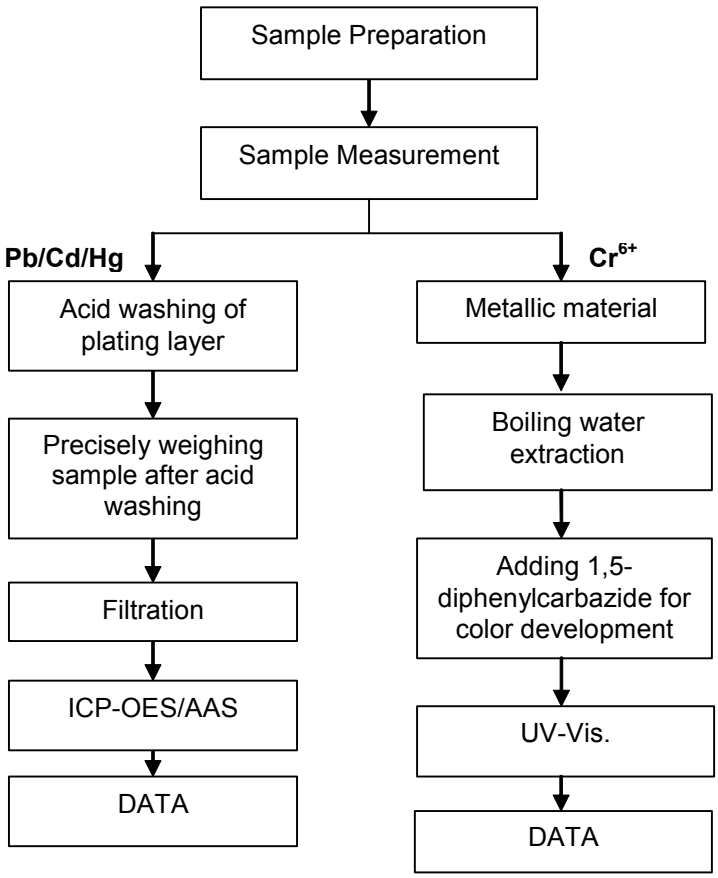
Plating Pb/Cd/Hg/Cr^{6+} Testing Flow Chart

1) Name of the person who made testing: Sielina Song/Xiaolong Yang
2) Name of the person in charge of testing: Luna Xu/Shara Wang



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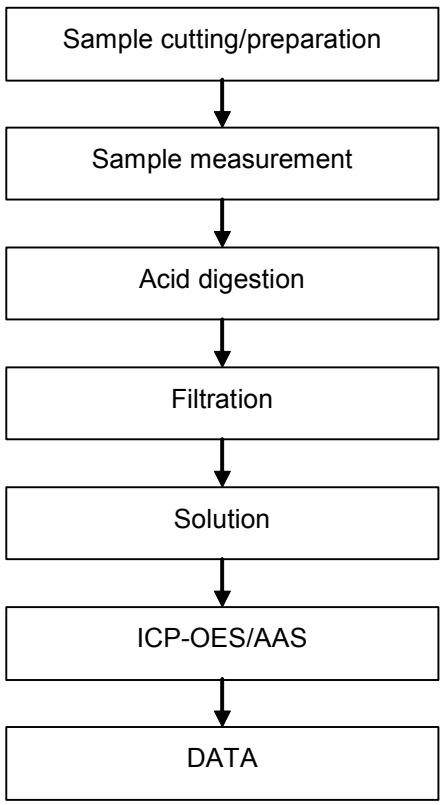
Elements Testing Flow Chart

1) Name of the person who made testing: Meria Jin/Sielina Song
2) Name of the person in charge of testing: Luna Xu/Jan Shi



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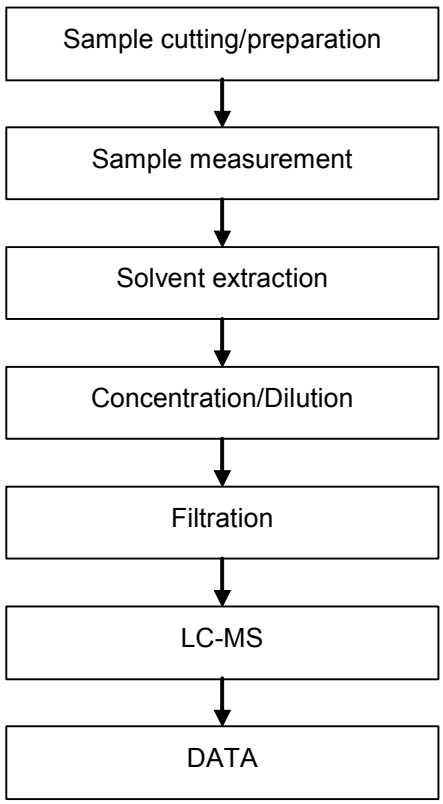
PFOS Testing Flow Chart

1) Name of the person who made testing: Jane Yang
2) Name of the person in charge of testing: Judy Li



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Sample photo:

SHA18-029047.005

SHA18-029047.006

SGS authenticate the photo on original report only

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CTI 华测检测 CENTRE TESTING INTERNATIONAL

CMA 150900341277

检测报告
Test Report

报告编号 A2180086608101001E
Report No. A2180086608101001E

申请单位 无锡市明星精密线材有限公司
Applicant WUXI CITY MINGXING PRECISION CO.,LTD
地 址 江苏省无锡市鹅湖镇甘露甘厚路工业集中区
Address GANHOU ROAD, INDUSTRIAL FOCUS AREAS, GANLU E'HU TOWN, WUXI CITY, JIANGSU 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 client

样品名称	镀锡铜线
Sample Name	TINNDE COPPER WIRE
样品接收日期	2018.06.04
Sample Received Date	Jun. 4, 2018
样品检测日期	2018.06.04-2018.06.07
Testing Period	Jun. 4, 2018 to Jun. 7, 2018

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))进行测试。
Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)) 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).

主 检 Tested by
批 准 Approved by
苏红伟
实验室高级经理 Senior Laboratory Manager

审 核 Reviewed by
日 期 Date 2018.06.07

No. R201802152

检验检测专用章 CENTRE TESTING INTERNATIONAL PINBIAO(SHANGHAI) CO., LTD.
检验检测类别标检测品标检测技术有限公司
Centre Testing International Pinbiao(Shanghai) Co., Ltd.
上海市浦东新区新金桥路 1996 号
No.1996, Xinjinqiao Road, Pudong New District,Shanghai,China

检测报告
Test Report

****

结论 Conclusion

测试样品 Tested Sample	依据标准/指令 According to standard/directive	结果 Result
提交样品 Submitted Sample	欧盟RoHS指令2011/65/EU RoHS Directive 2011/65/EU	符合 Pass

****

符合表示检测结果满足欧盟RoHS指令2011/65/EU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.

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

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL	限值 Limit
铅 Lead(Pb)	N.D.	2 mg/kg	1000 mg/kg
镉 Cadmium(Cd)	N.D.	2 mg/kg	100 mg/kg
汞 Mercury(Hg)	N.D.	2 mg/kg	1000 mg/kg
六价铬 Hexavalent Chromium(Cr(VI))	N.D. ▼	0.10 μg/cm² (LOQ)	1000 mg/kg

测试样品/部位描述 有银色镀层的金属丝
Tested Sample/Part Description Metal wire with silvery plating

备注: **对于检测铅，镉，汞之样品已完全溶解。**
-N.D. = 未检出（小于方法检出限或定量限）
-mg/kg = ppm = 百万分之一
-1000 mg/kg = 0.1%
-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。

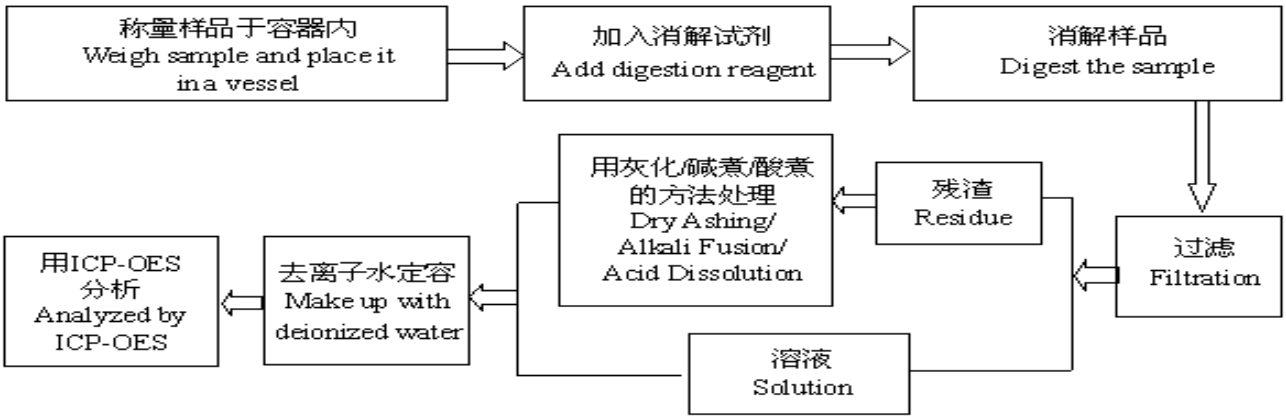
Remark: **The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.**
-MDL = Method Detection Limit
-N.D. = Not Detected (<MDL or LOQ)
-mg/kg = ppm = parts per million
-1000 mg/kg = 0.1%
-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 μg/cm²
-▼The sample is negative for Cr(VI) − The Cr(VI) concentration is below 0.10 μg/cm². The coating is considered a non-Cr(VI) based coating.

检测报告
Test Report

检测流程 Test Process

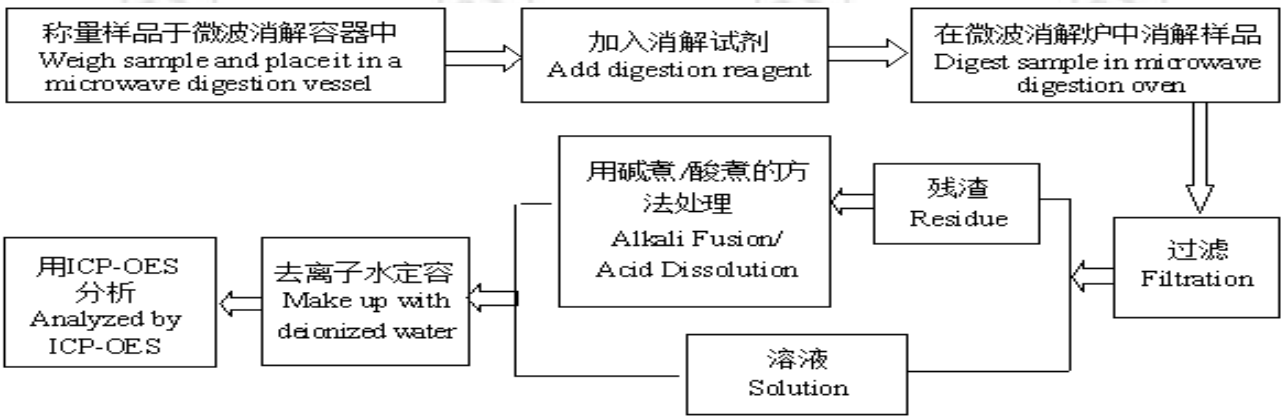
1. 铅(Pb)， 镉(Cd)

Lead(Pb), Cadmium(Cd)



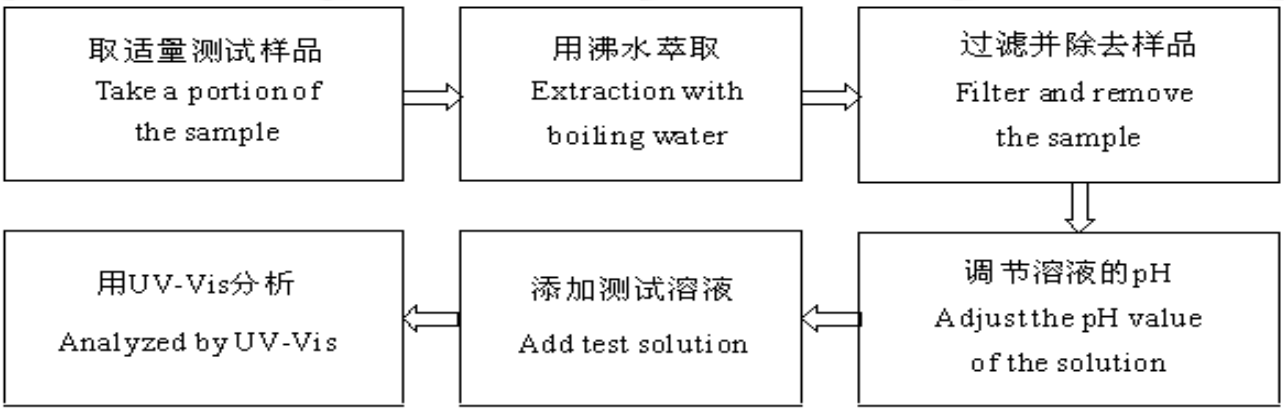
2. 汞(Hg)

Mercury(Hg)



3. 六价铬(Cr(VI))

Hexavalent Chromium(Cr(VI))



检测报告
Test Report

样品图片
Photo(s) of the sample(s)

报告结束

*** End of report ***

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 invalidated without approval signature, special seal and the seal on the perforation;
2. 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 sample(s) and sample information was/were provided by the client who should be responsible for the autenticity which CTI hasn’t verified;
3. 本报告检测结果仅对送测样品负责；
   The result(s) shown in this report refer(s) only to the sample(s) tested;
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   Without written approval of CTI, this report can’t be reproduced except in full;
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COLORANT CHROMATICS TRADING(SHANGHAI)CO.,LTD

2F,BLOCK C,VI-HUB@JINQIAO,200 JINSU ROAD,PUDONG,SHANGHAI

The following sample(s) was/were submitted and identified on behalf of the clients as : FEP Colormasterbatch

SGS Job No. :	SP18-006609 - SH
Lot No. :	5763809
Date of Sample Received :	08 Mar 2018
Testing Period :	08 Mar 2018 - 14 Mar 2018
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

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

Helen Liu
Approved Signatory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA18-042268.001	Black solid pellet

Remarks :

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	*001*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND

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Test Item(s)	Limit	Unit	MDL	*001*
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND
Di-2-Ethyl Hexyl Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1)The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2)On 4 June 2015, Commission Directive (EU) 2015/863 was published in the Official Journal of the European Union (OJEU) to include the phthalates BBP, DBP, DEHP and DIBP into ANNEX II of the Rohs Recast Directive. The new law restricts each phthalate to no more than 0.1% in each homogeneous material of an electrical product.

(3)The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

(4)The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.

(5)The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

Halogen

Test Method : With reference to EN 14582: 2016 , analysis was performed by IC.

Test Item(s)	Unit	MDL	*001*
Fluorine (F)	mg/kg	50	>100000
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND

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Test Item(s)	Unit	MDL	*001*
Iodine (I)	mg/kg	50	ND

Element(s)

Test Method : With reference to ASTM D 4004-06(2012), analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	*001*
Antimony (Sb)	mg/kg	50	ND

Hexabromocyclododecane (HBCDD)

Test Method : With reference to US EPA 3550C: 2007, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	*001*
Hexabromocyclododecane (HBCDD)	25637-99-4, 3194- 55-6	mg/kg	10	ND

Phthalates Content

Test Method : With reference to EN 14372:2004, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	*001*
Diisononyl Phthalate (DINP)	28553-12-0 /68515-48-0	%	0.01	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 /68515-49-1	%	0.01	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%	0.003	ND

Notes :

(1) DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending

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Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.

ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information

PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid)

Test Method : With reference to US EPA 3550C: 2007, analysis was performed by HPLC-MS.

Test Item(s)	Limit	Unit	MDL	001
Perfluorooctanesulfonate (PFOS)^	1000	mg/kg	10	ND
Perfluorooctanoic Acid (PFOA)	-	mg/kg	10	ND

Notes :

(1) Max. limit specified by commission regulation (EU) No. 757/2010 amending regulation (EC) No 850/2004

(2)^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluoroctanesulfonic acid, Perfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamide, N-Ethylperfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamidoethanol and N-Ethylperfluoroctane sulfonamidoethanol.

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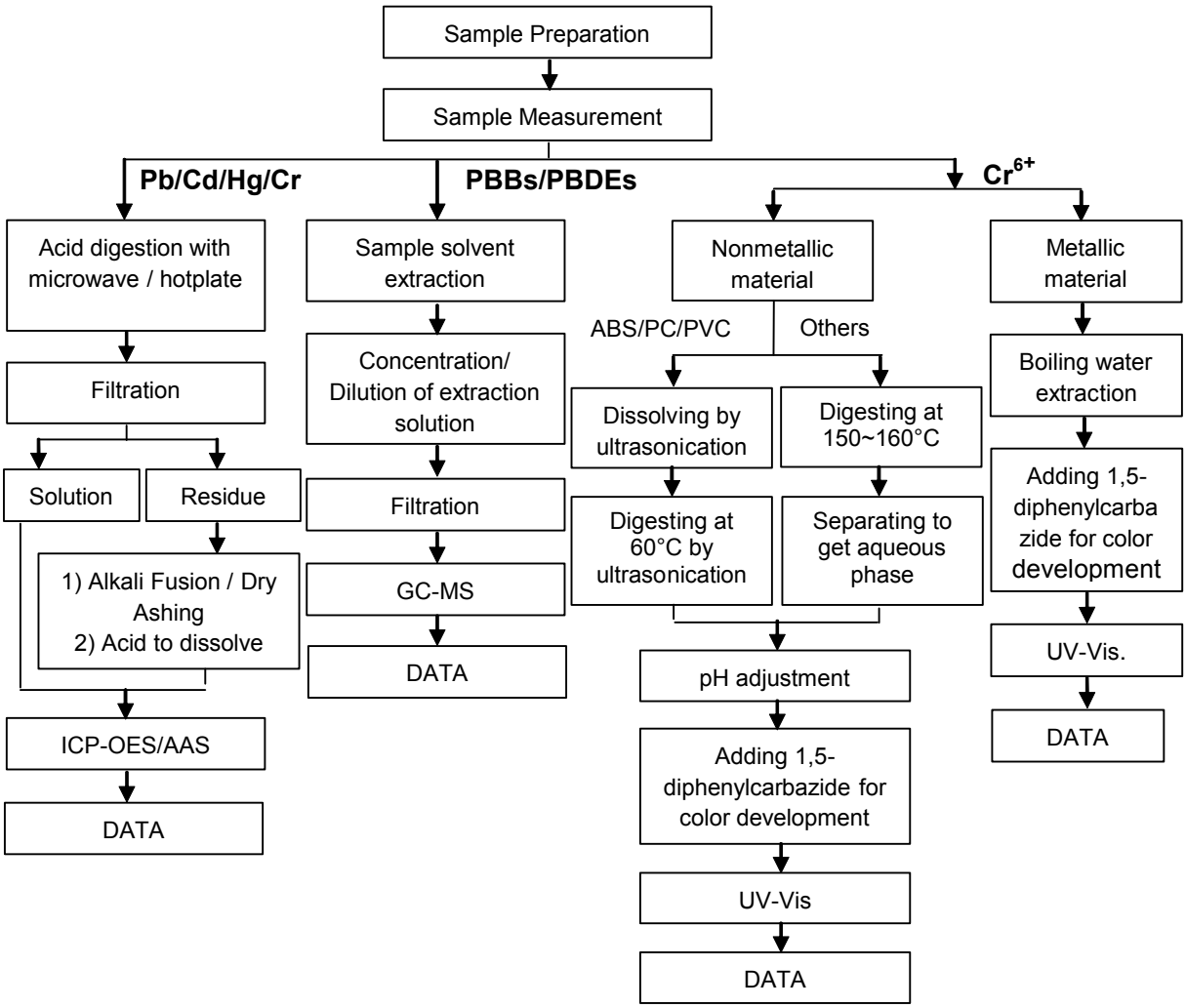
ATTACHMENTS

Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs Testing Flow Chart

1) Name of the person who made testing: Meria Jin/Gary Xu/ Xiaolong Yang/Sielina Song
2) Name of the person in charge of testing: Jan Shi/Myra Ma/Luna Xu/Shara Wang
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded)



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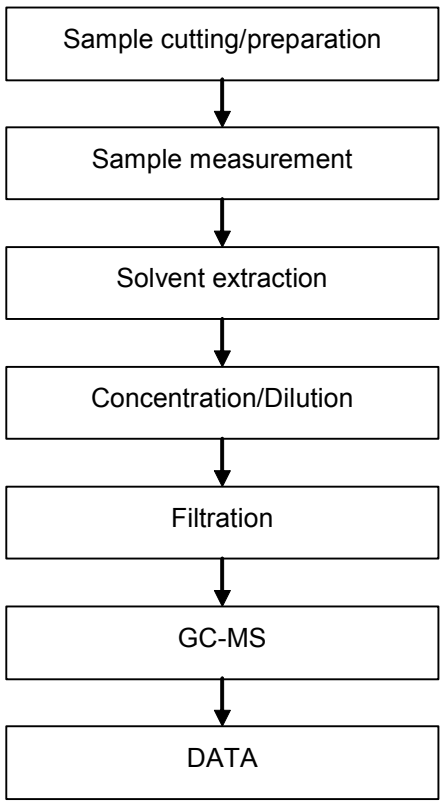
Phthalates Testing Flow Chart

1) Name of the person who made testing: Sherlock Gao
2) Name of the person in charge of testing: Jessy Huang



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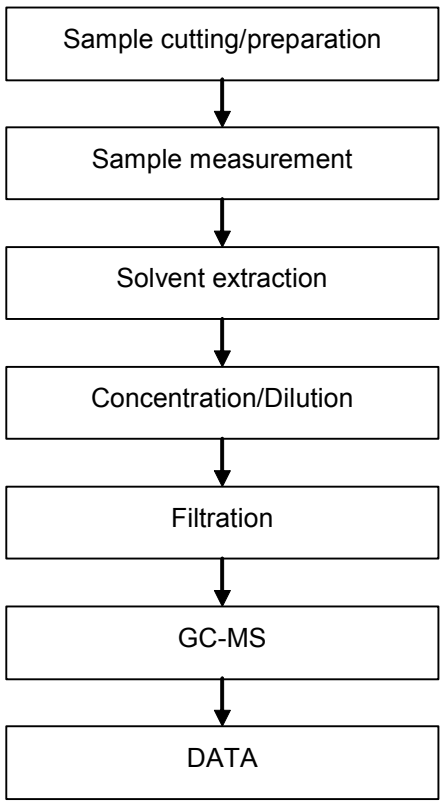
HBCDD Testing Flow Chart

1) Name of the person who made testing: Gary Xu
2) Name of the person in charge of testing: Myra ma



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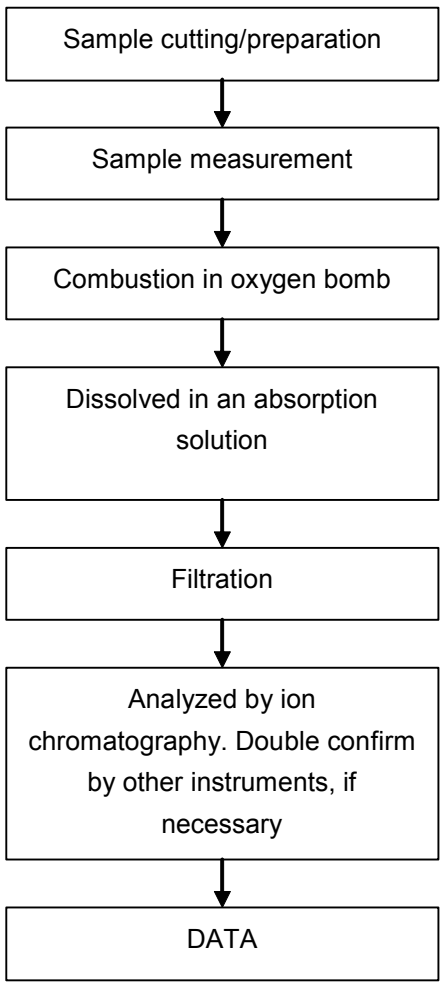
Halogen Testing (oxygen bomb) Flow Chart

1) Name of the person who made testing: Kevin Xu
2) Name of the person in charge of testing: Sisily Yin



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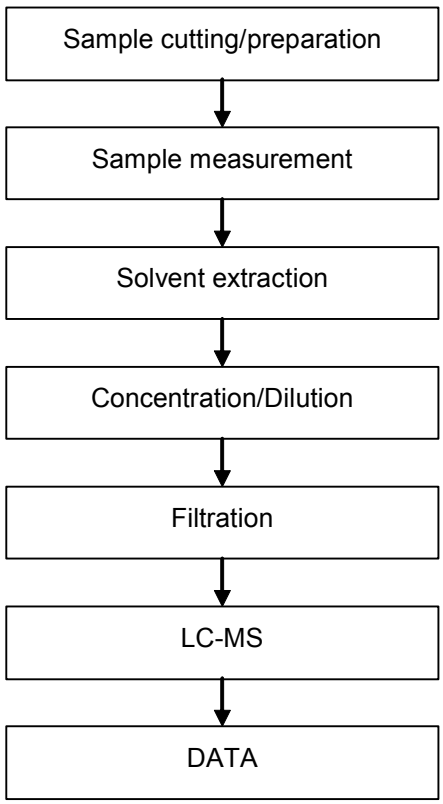
PFOS/PFOA Testing Flow Chart

1) Name of the person who made testing: Jane Yang
2) Name of the person in charge of testing: Judy Li



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SHA18-042268.001

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Test Report

No.: CE/2018/20648 Date: 2018/02/08

DAI-ICHI SEIKO CO., LTD.
7F-5, NO. 700, JUNG-JENG RD., JUNG-HE CITY, TAIPEI 235, TAIWAN, R.O.C.

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

Sample Submitted By	:	DAI-ICHI SEIKO CO., LTD.
Sample Description	:	METAL (2893-002)
Style/Item No.	:	C5210R
Sample Receiving Date	:	2018/02/02
Testing Period	:	2018/02/02 TO 2018/02/08

Test Requested	:	As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI) contents in the submitted sample(s).
Test Method	:	Please refer to following pages.
Test Result(s)	:	Please refer to following pages.

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

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Test Report

No.:CE/2018/20648 Date:2018/02/08

DAI-ICHI SEIKO CO.,LTD.
7F-5,NO.700,JUNG-JENG RD.,JUNG-HE CITY,TAIPEI 235,TAIWAN,R.O.C.

Test Result(s)

PART NAME No.1 : COPPER COLORED METAL

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	15.2
Mercury (Hg)	mg/kg	With reference to IEC 62321-4 (2013) and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)(#2)	$\mu g/cm^2$	With reference to IEC 62321-7-1 (2015) and performed by UV-VIS.	0.10	n.d.

Note:

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

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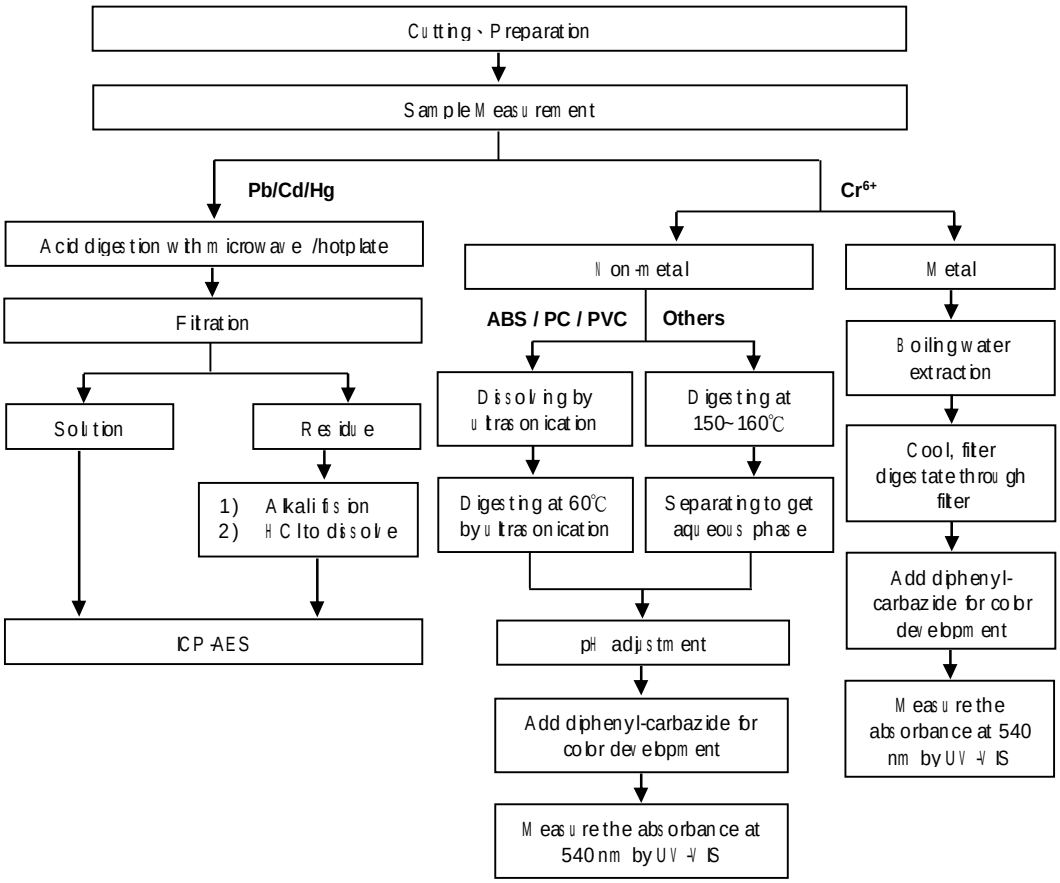
DAI-ICHI SEIKO CO.,LTD.
7F-5,NO.700,JUNG-JENG RD.,JUNG-HE CITY,TAIPEI 235,TAIWAN,R.O.C.

Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)

- Technician: JR Wang
- Supervisor: Troy Chang



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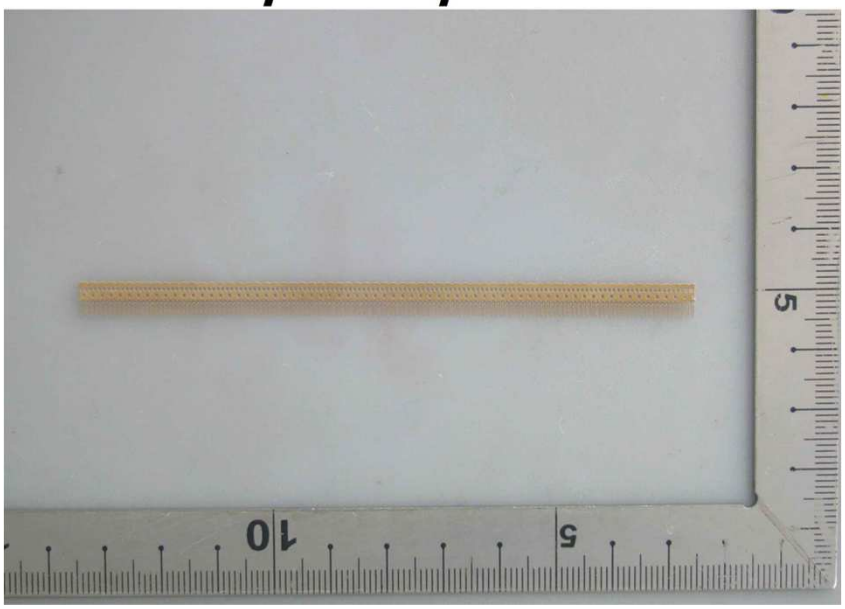
DAI-ICHI SEIKO CO.,LTD.
7F-5, NO.700, JUNG-JENG RD., JUNG-HE CITY, TAIPEI 235, TAIWAN, R.O.C.

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

CE/2018/20648



** End of Report **

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Chemical Laboratory - Kao., SGS Taiwan Ltd.

Test Report

No. : KA/2018/50624 Date : 2018/05/22

POLYPLASTICS TAIWAN CO., LTD.
NO. 13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

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

Sample Description	:	PBT
Style/Item No.	:	310NF ED3002 / Lot No.7374770
Color	:	ED3002
Sample Receiving Date	:	2018/5/10
Testing Period	:	2018/5/10 TO 2018/05/22
Sample Submitted By	:	POLYPLASTICS TAIWAN CO., LTD.

==========

Test Requested :

(1) As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample.

(2) Please refer to next page(s).

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

Ray Chang Ph.D. / Manager - Tech
Signed for and on behalf of
SGS Taiwan Limited

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POLYPLASTICS TAIWAN CO., LTD.
NO. 13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

Test Result(s)

PART NAME No.1 : ED3002 PBT

Test Item(s)	Unit	Method	MDL	Result No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321-7-2:2017 and performed by UV-VIS.	8	n.d.
Sum of PBBs	mg/kg	With reference to IEC 62321-6: 2015 and performed by GC/MS.	-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl			5	n.d.
Tetrabromobiphenyl			5	n.d.
Pentabromobiphenyl			5	n.d.
Hexabromobiphenyl			5	n.d.
Heptabromobiphenyl			5	n.d.
Octabromobiphenyl			5	n.d.
Nonabromobiphenyl			5	n.d.
Decabromobiphenyl			5	n.d.
Sum of PBDEs	mg/kg	With reference to IEC 62321-6: 2015 and performed by GC/MS.	-	n.d.
Monobromodiphenyl ether			5	n.d.
Dibromodiphenyl ether			5	n.d.
Tribromodiphenyl ether			5	n.d.
Tetrabromodiphenyl ether			5	n.d.
Pentabromodiphenyl ether			5	n.d.
Hexabromodiphenyl ether			5	n.d.
Heptabromodiphenyl ether			5	n.d.
Octabromodiphenyl ether			5	n.d.
Nonabromodiphenyl ether			5	n.d.
Decabromodiphenyl ether			5	n.d.

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POLYPLASTICS TAIWAN CO., LTD.
NO. 13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

Test Item(s)	Unit	Method	MDL	Result
				No.1
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	mg/kg	With reference to IEC 62321-8:2017. Analysis was performed by GC/MS.	50	n.d.
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)			50	n.d.
BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)			50	n.d.
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)			50	n.d.
Halogen				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582:2016. Analysis was performed by IC.	50	930
Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)			50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)			50	n.d.
Halogen-Iodine (I) (CAS No.: 14362-44-8)			50	n.d.

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POLYPLASTICS TAIWAN CO., LTD.
NO. 13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

Note：

1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated

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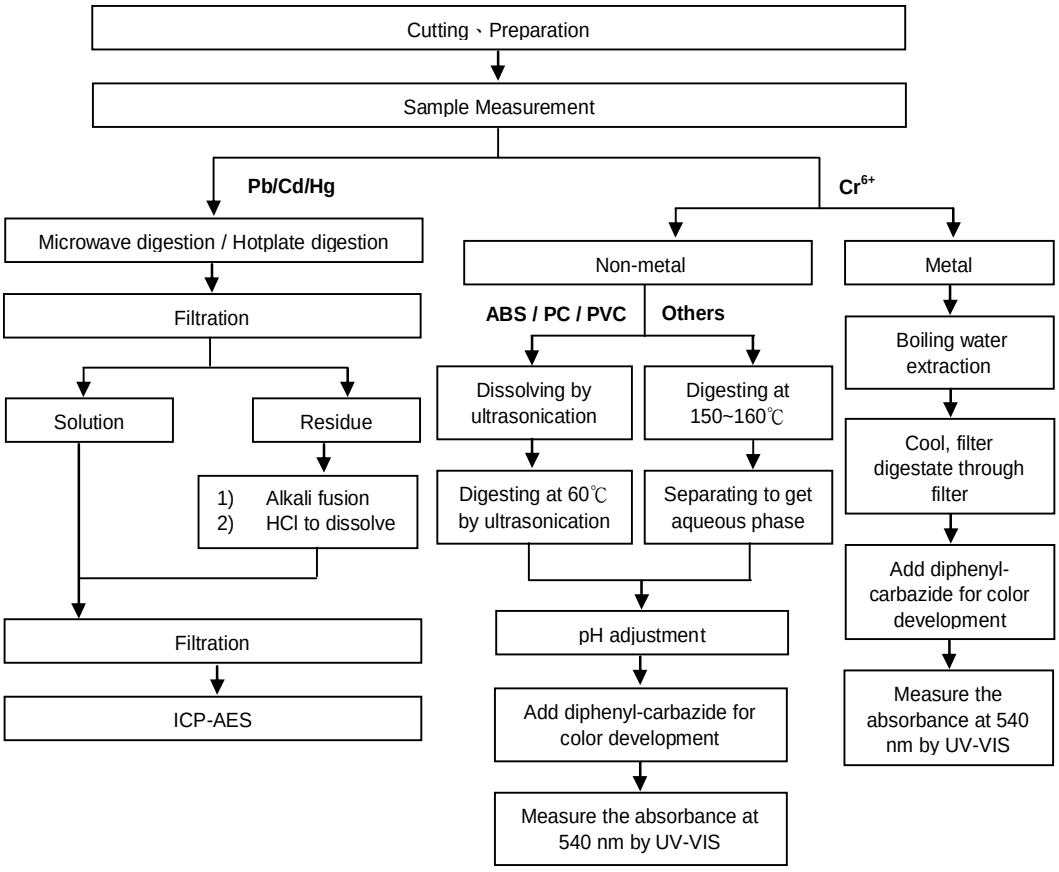
POLYPLASTICS TAIWAN CO., LTD.
NO. 13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart. （Cr^{6+} test method excluded）

- Technician : Jony Liu
- Supervisor: Ray Chang



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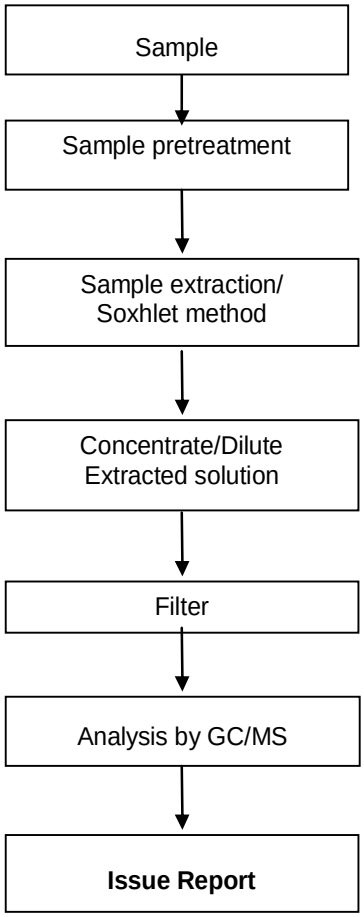
POLYPLASTICS TAIWAN CO., LTD.
NO. 13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

PBB/PBDE analytical FLOW CHART

1) Name of the person who made measurement: Dorothy Chen

2) Name of the person in charge of measurement: Ray Chang



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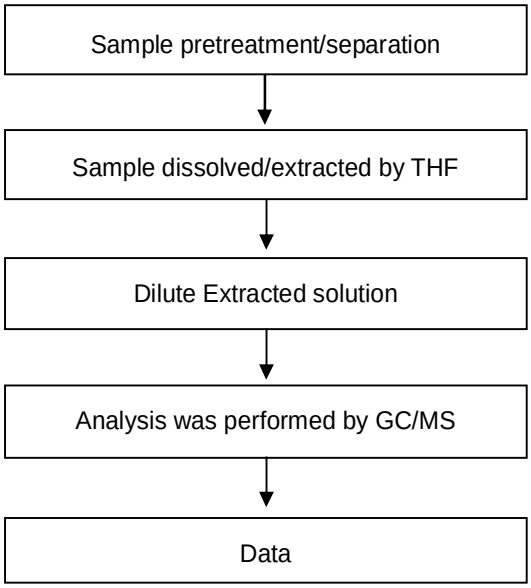
POLYPLASTICS TAIWAN CO., LTD.
NO. 13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

Analytical flow chart of phthalate content

- Name of the person who made measurement: Dorothy Chen
- Name of the person in charge of measurement: Ray Chang

【Test method: IEC 62321-8】



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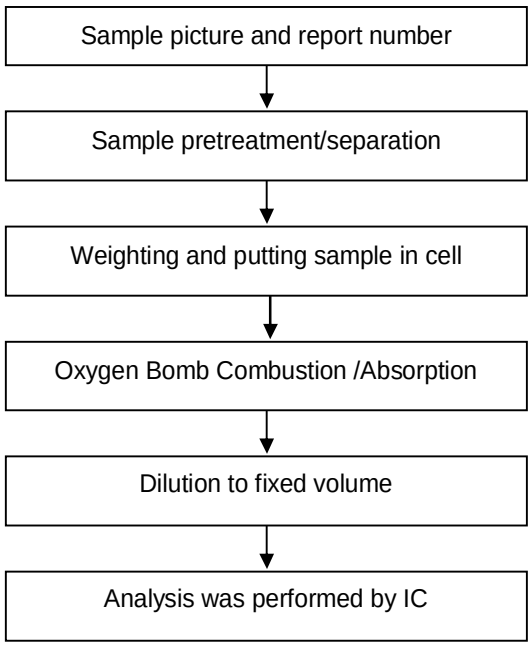
POLYPLASTICS TAIWAN CO., LTD.
NO. 13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

Analytical flow chart of halogen content

1) Name of the person who made measurement: Jean Hung
2) Name of the person in charge of measurement: Ray Chang



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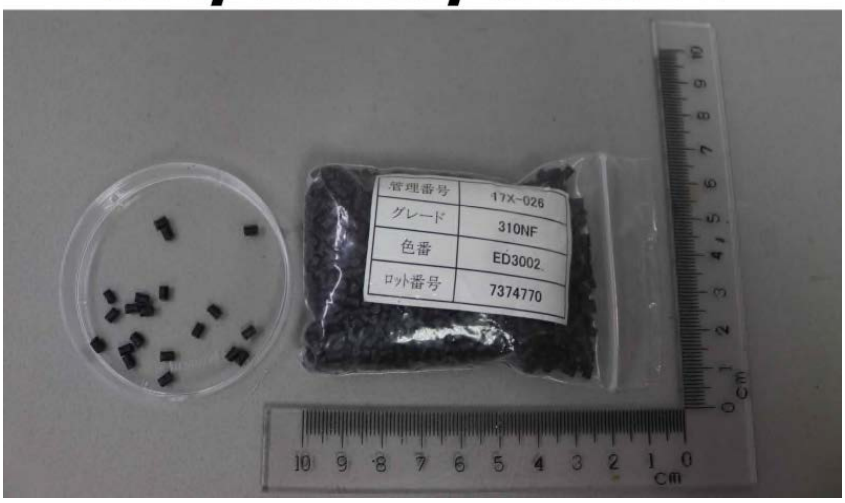
Test Report

No. : KA/2018/50624 Date : 2018/05/22

POLYPLASTICS TAIWAN CO., LTD.
NO. 13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

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

KA/2018/50624



** End of Report **

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Test Report

No. : CE/2018/24608 Date : 2018/02/27

DAI-ICHI SEIKO CO., LTD.
7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.

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

Sample Submitted By	:	DAI-ICHI SEIKO CO., LTD.
Sample Description	:	PLATING(1568-0003)
Style/Item No.	:	PLATING14(Au/Ni)
Sample Receiving Date	:	2018/02/21
Testing Period	:	2018/02/21 TO 2018/02/27

==========

Test Requested :

(1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI) contents in the submitted sample(s).

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

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

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

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DAI-ICHI SEIKO CO., LTD.
7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.

Test Result(s)

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

Test Item(s)	Unit	Method	MDL	Result No.1
Cadmium (Cd)	mg/kg	IEC 62321-5 (2013) application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	IEC 62321-5 (2013) application of modified digestion by surface etching and performed by ICP-AES.	2	20.6
Mercury (Hg)	mg/kg	IEC 62321-4 (2013) application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)(#2)	μg/cm²	With reference to IEC 62321-7-1 (2015) and performed by UV-VIS.	0.10	n.d.
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	μg/m²	With reference to US EPA 3550C (2007). Analysis was performed by LC/MS.	1	n.d.

Note：

1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. (#2) =
   a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 μg/cm². The sample coating is considered to contain Cr(VI)
   b. The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10 μg/cm²). The coating is considered a non-Cr(VI) based coating
   c. The result between 0.10 μg/cm² and 0.13 μg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.

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

Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1μg/m².

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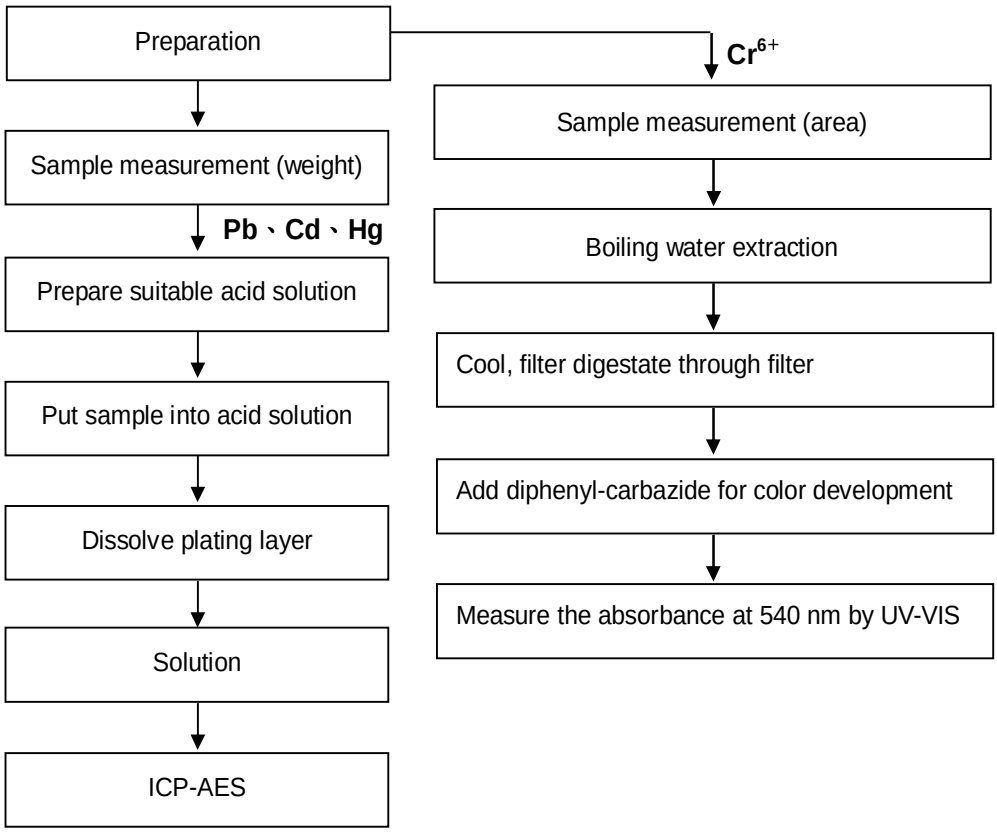
DAI-ICHI SEIKO CO., LTD.
7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.

The plating layer of samples were dissolved totally by pre-conditioning method according to below flow chart.（Cr^{6+} test method excluded）

- Technician: JR Wang
- Supervisor: Troy Chang

Flow Chart of Stripping method for metal analysis



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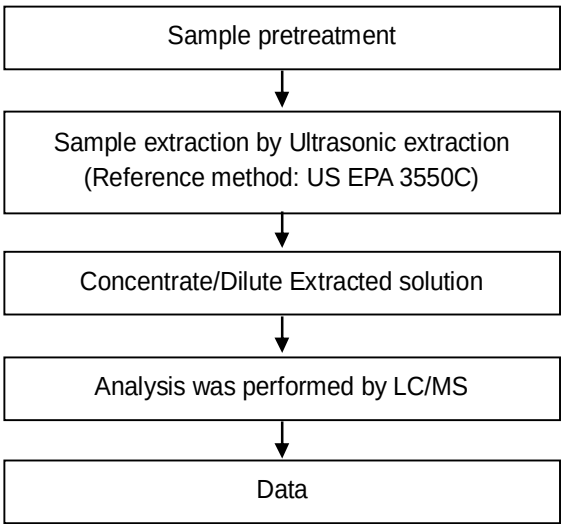
DAI-ICHI SEIKO CO., LTD.
7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.

Analytical flow chart - PFOS

- Technician: Yaling Tu
- Supervisor: Troy Chang



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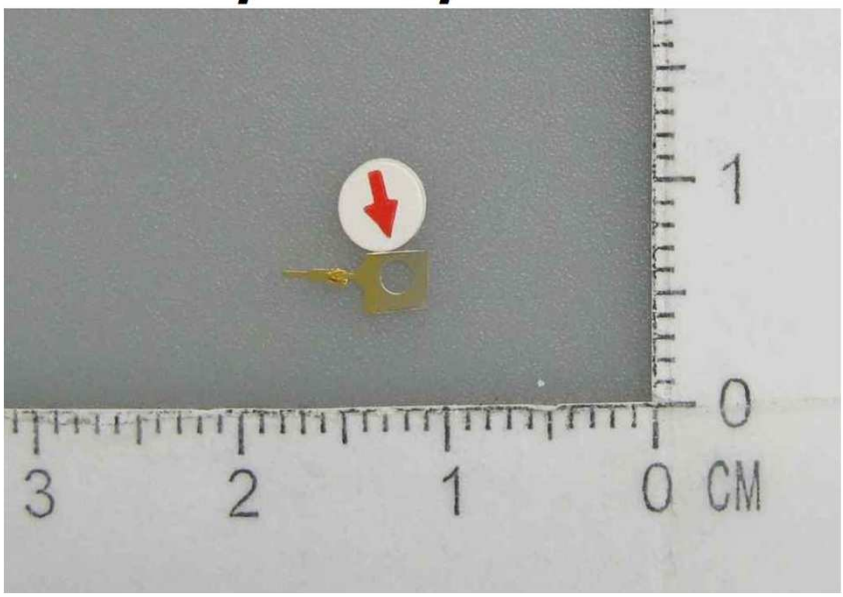
DAI-ICHI SEIKO CO., LTD.
7F-5, NO. 700, JUNG-JENG RD, JUNG-HE CITY, TAIPEI 235, TAIWAN, R. O. C.

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

CE/2018/24608



** End of Report **

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Test Report

No.: CE/2018/20647 Date: 2018/02/08

DAI-ICHI SEIKO CO., LTD.
7F-5, NO. 700, JUNG-JENG RD., JUNG-HE CITY, TAIPEI 235, TAIWAN, R.O.C.

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

Sample Submitted By	:	DAI-ICHI SEIKO CO., LTD.
Sample Description	:	METAL (2927-0001)
Style/Item No.	:	C5191R
Sample Receiving Date	:	2018/02/02
Testing Period	:	2018/02/02 TO 2018/02/08

Test Requested	:	As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI) contents in the submitted sample(s).
Test Method	:	Please refer to following pages.
Test Result(s)	:	Please refer to following pages.

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

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DAI-ICHI SEIKO CO.,LTD.
7F-5,NO.700,JUNG-JENG RD.,JUNG-HE CITY,TAIPEI 235,TAIWAN,R.O.C.

Test Result(s)

PART NAME No.1 : COPPER COLORED METAL

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	7.34
Mercury (Hg)	mg/kg	With reference to IEC 62321-4 (2013) and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)(#2)	$\mu g/cm^2$	With reference to IEC 62321-7-1 (2015) and performed by UV-VIS.	0.10	n.d.

Note:

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

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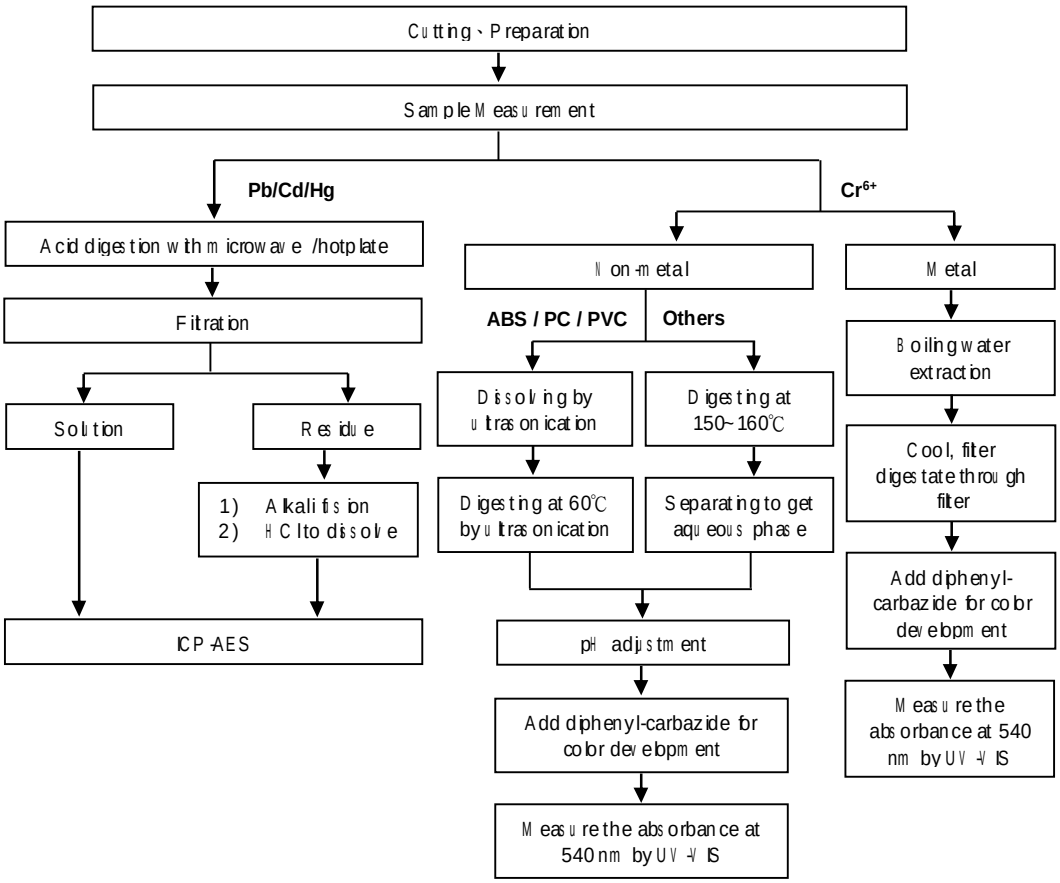
DAI-ICHI SEIKO CO., LTD.
7F-5, NO. 700, JUNG-JENG RD., JUNG-HE CITY, TAIPEI 235, TAIWAN, R.O.C.

Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)

- Technician: JR Wang
- Supervisor: Troy Chang



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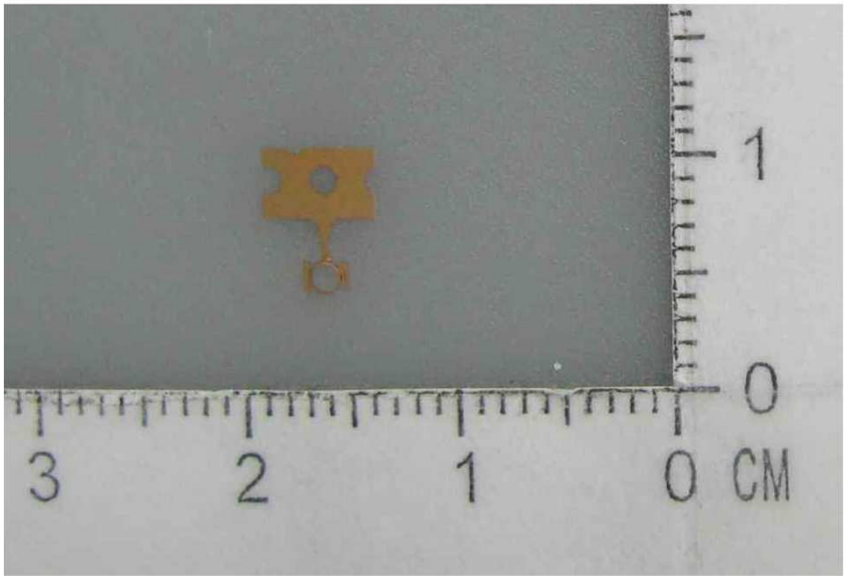
DAI-ICHI SEIKO CO., LTD.
7F-5, NO. 700, JUNG-JENG RD., JUNG-HE CITY, TAIPEI 235, TAIWAN, R.O.C.

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

CE/2018/20647



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Test Report

No. : CE/2018/12760 Date : 2018/01/19

DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

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

Sample Description	:	ADHESIVE
Style/Item No.	:	G9000 SERIES (G9000, G9000 C, G9000-SY, G9000W ,G9010, G9011, G9012)
The Testing Sample	:	G9000-SY
Lot No.	:	7A03
Sample Receiving Date	:	2018/01/12
Testing Period	:	2018/01/12 TO 2018/01/19

==========

Test Requested :

(1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample(s).

(2) As specified by client, to test Halogen-Fluorine, Chlorine, Bromine, Iodine contents in the submitted sample.

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

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

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DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

Test Result(s)

PART NAME No.1 : TRANSPARENT DOUBLE SIDED ADHESIVE (EXCLUDING THE RELEASE LINER)

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4 (2013) and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321-7-2 (2017) and performed by UV-VIS.	8	n.d.
Sum of PBBs	mg/kg	With reference to IEC 62321-6 (2015) and performed by GC/MS.	-	n.d.
Monobromobiphenyl	mg/kg		5	n.d.
Dibromobiphenyl	mg/kg		5	n.d.
Tribromobiphenyl	mg/kg		5	n.d.
Tetrabromobiphenyl	mg/kg		5	n.d.
Pentabromobiphenyl	mg/kg		5	n.d.
Hexabromobiphenyl	mg/kg		5	n.d.
Heptabromobiphenyl	mg/kg		5	n.d.
Octabromobiphenyl	mg/kg		5	n.d.
Nonabromobiphenyl	mg/kg		5	n.d.
Decabromobiphenyl	mg/kg		5	n.d.
Sum of PBDEs	mg/kg		-	n.d.
Monobromodiphenyl ether	mg/kg		5	n.d.
Dibromodiphenyl ether	mg/kg		5	n.d.
Tribromodiphenyl ether	mg/kg		5	n.d.
Tetrabromodiphenyl ether	mg/kg		5	n.d.
Pentabromodiphenyl ether	mg/kg		5	n.d.
Hexabromodiphenyl ether	mg/kg		5	n.d.
Heptabromodiphenyl ether	mg/kg		5	n.d.
Octabromodiphenyl ether	mg/kg		5	n.d.
Nonabromodiphenyl ether	mg/kg		5	n.d.
Decabromodiphenyl ether	mg/kg		5	n.d.

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DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

Test Item(s)	Unit	Method	MDL	Result
				No.1
Halogen				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582 (2016). Analysis was performed by IC.	50	n.d.
Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg		50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg		50	n.d.
Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.

Note：

1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated

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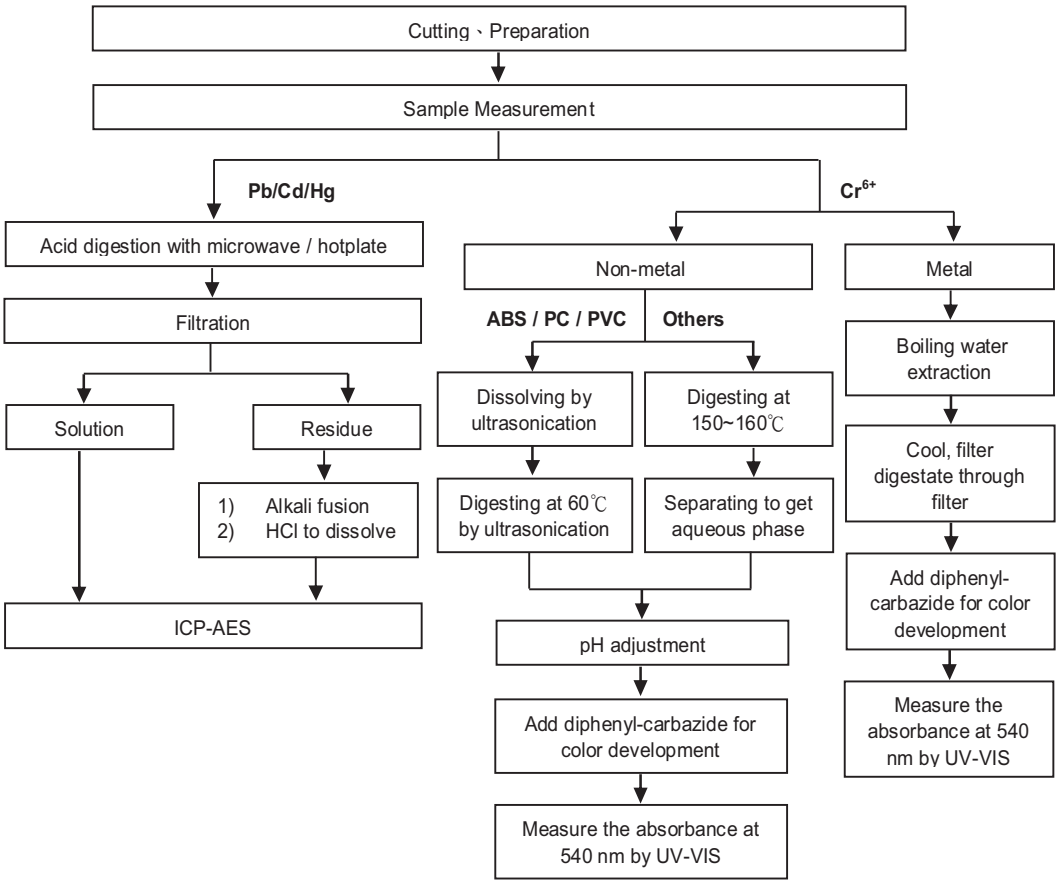
DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)

- Technician : JR Wang
- Supervisor: Troy Chang



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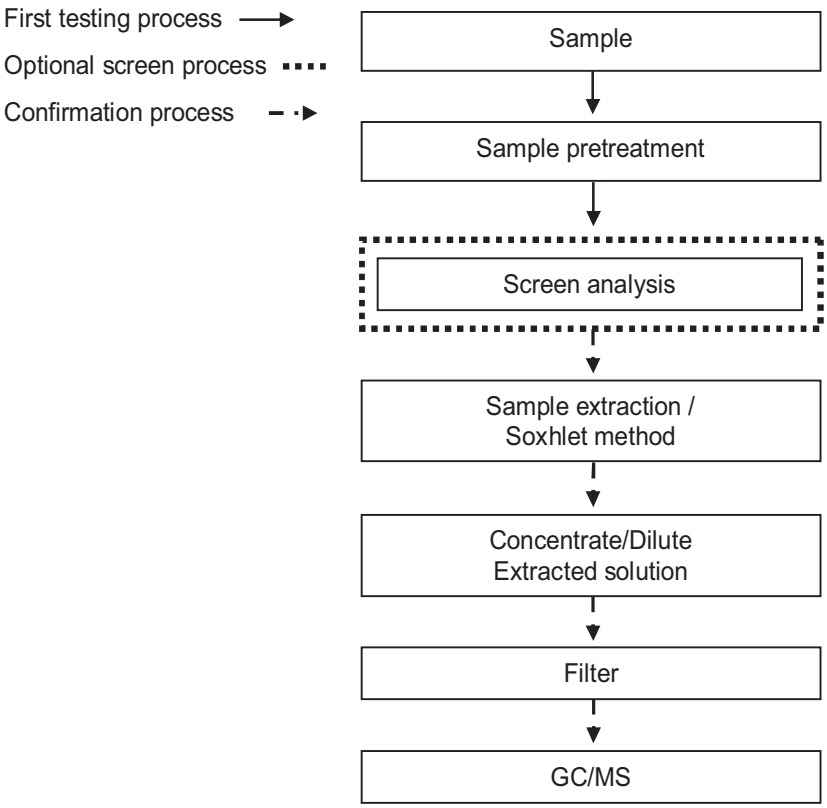
DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

Analytical flow chart – PBB / PBDE

- Technician : Yaling Tu
- Supervisor: Troy Chang



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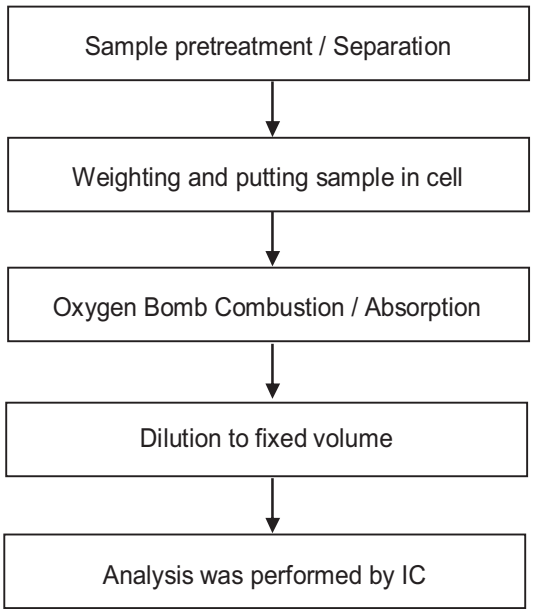
DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

Analytical flow chart - Halogen

- Technician: Rita Chen
- Supervisor: Troy Chang



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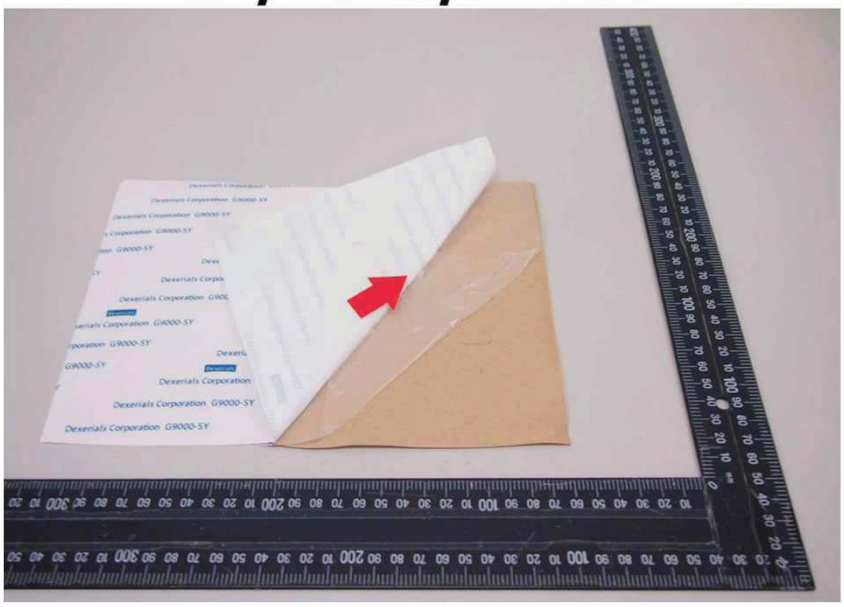
DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

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

CE/2018/12760



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Test Report

No. : CE/2018/22628 Date : 2018/02/22

DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

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

Sample Description	:	ADHESIVE
Style/Item No.	:	G9000 SERIES (G9000, G9000 C, G9000-SY, G9000W ,G9010, G9011, G9012)
The Testing Sample	:	G9000-SY
Lot No.	:	7H02
Sample Receiving Date	:	2018/02/09
Testing Period	:	2018/02/09 TO 2018/02/22

==========

Test Requested :

(1) As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine DBP, BBP, DEHP, DIBP contents in the submitted sample(s).

(2) Please refer to next pages for the other item(s).

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

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

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DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

Test Result(s)

PART NAME No.1 : TRANSPARENT DOUBLE SIDED ADHESIVE (EXCLUDING THE RELEASE LINER)

Test Item(s)	Unit	Method	MDL	Result
				No.1
BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DEP (Di-ethyl phthalate) (CAS No.: 84-66-2)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
DMP (Di-methyl phthalate) (CAS No.: 131-11-3)	mg/kg	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
Antimony (Sb)	mg/kg	With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.	2	n.d.

Note：

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected = less than MDL

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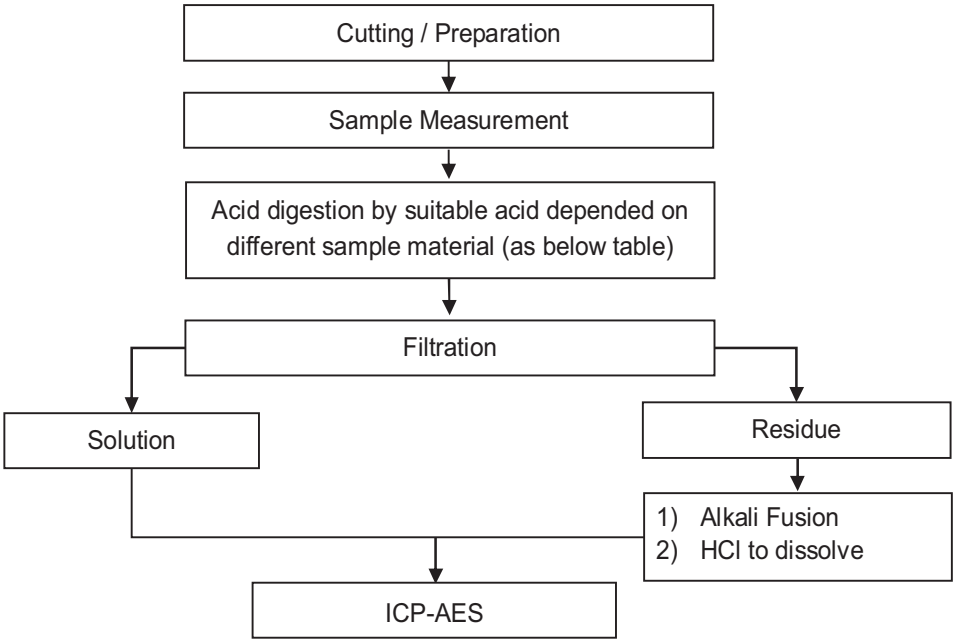
These samples were dissolved totally by pre-conditioning method according to below flow chart.

- Technician: JR Wang
- Supervisor: Troy Chang

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



Steel, copper, aluminum, solder	Aqua regia, HNO_3, HCl, HF, H_2O_2
Glass	HNO_3/HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO_3
Plastic	H_2SO_4, H_2O_2, HNO_3, HCl
Others	Added appropriate reagent to total digestion

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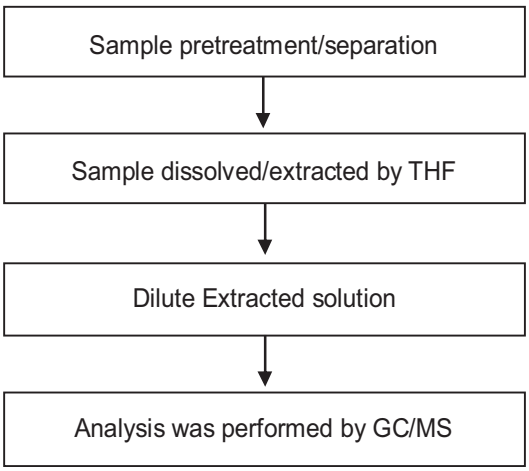
DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

Analytical flow chart - Phthalate

- Technician: Andy Hsu
- Supervisor: Troy Chang

【Test method: IEC 62321-8】



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

CE/2018/22628

** End of Report **

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DAIKIN FLUORO CHEMICALS(CHINA) CO., LTD.

NO.8 JINYU ROAD(WEST) ADVANCED MATERIALS INDUSTRIAL PARK,CHANGSHU,JIANGSU 215522，CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : NEOFLON FEP

SGS Job No. :	SP18-000471 - SH
Model No. :	NP-20,NP-30,NP-101,NP-120,NP-1105 MIX
Date of Sample Received :	10 Jan 2018
Testing Period :	10 Jan 2018 - 16 Jan 2018
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) do not exceed the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

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

Helen Liu
Approved Signatory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA18-006893.007	Transparent solid pellet

Remarks :

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC62321-7-2:2017 and IEC 62321-6:2015, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	*007*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND

检验检测专用章 Inspection & Testing Services

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Test Item(s)	Limit	Unit	MDL	*007*
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

(1)The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2)On 4 June 2015, Commission Directive (EU) 2015/863 was published in the Official Journal of the European Union (OJEU) to include the phthalates BBP, DBP, DEHP and DIBP into ANNEX II of the Rohs Recast Directive. The new law restricts each phthalate to no more than 0.1% in each homogeneous material of an electrical product.

(3)The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

(4)The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.

(5)The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

Halogen

Test Method : With reference to EN 14582: 2016 , analysis was performed by IC.

Test Item(s)	Unit	MDL	*007*
Fluorine (F)	mg/kg	50	>100000
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

Element(s)

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Test Method : With reference to ASTM D 4004-06(2012), analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	*007*
Antimony (Sb)	mg/kg	50	ND

Hexabromocyclododecane (HBCDD)

Test Method : With reference to US EPA 3550C: 2007, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	*007*
Hexabromocyclododecane (HBCDD)	25637-99-4, 3194- 55-6	mg/kg	10	ND

Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCP)

Test Method : With reference to ISO 18219: 2015, analysis was performed by GC-NCI-MS

Test Item(s)	Unit	MDL	*007*
Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCP)	mg/kg	50	ND

Tetrabromobisphenol A (TBBP-A)

Test Method : With reference to US EPA 3540C: 1996, analysis was performed by GC-MS.

Test Item(s)	Unit	MDL	*007*
Tetrabromobisphenol A (TBBP-A)	mg/kg	10	ND

PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid)

Test Method : With reference to US EPA 3550C: 2007, analysis was performed by HPLC-MS.

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Test Item(s)	Limit	Unit	MDL	007
Perfluorooctanesulfonate (PFOS)^	1000	mg/kg	10	ND
Perfluorooctanoic Acid (PFOA)	-	mg/kg	10	ND

Notes :

(1) Max. limit specified by commission regulation (EU) No. 757/2010 amending regulation (EC) No 850/2004

(2)^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluoroctanesulfonic acid, Perfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamide, N-Ethylperfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamidoethanol and N-Ethylperfluoroctane sulfonamidoethanol.

Phthalates Content

Test Method : With reference to EN 14372:2004, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	007
Dibutyl Phthalate (DBP)	84-74-2	%	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 /68515-48-0	%	0.01	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 /68515-49-1	%	0.01	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%	0.003	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%	0.003	ND

Notes :

(1) DBP,BBP,DEHP Reference information: Entry 51 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC):

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles.

ii) Toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information

DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.

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ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.
Please refer to Regulation (EC) No 552/2009 to get more detail information

Polycyclic aromatic hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2014:01 PAK, analysis was performed by GC-MS.

Test Item(s)	Unit	MDL	007
Benzo(a)pyrene(BaP)	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	mg/kg	0.1	ND
Chrysene(CHR)	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	mg/kg	0.1	ND
Acenaphthylene(ANY)	mg/kg	0.1	ND
Acenaphthene(ANA)	mg/kg	0.1	ND
Fluorene(FLU)	mg/kg	0.1	ND
Phenanthrene(PHE)	mg/kg	0.1	ND
Pyrene(PYR)	mg/kg	0.1	ND
Anthracene(ANT)	mg/kg	0.1	ND
Fluoranthene(FLT)	mg/kg	0.1	ND
Sum of Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	mg/kg	-	ND
Naphthalene(NAP)	mg/kg	0.1	ND
Sum of 18 PAHs	mg/kg	-	ND

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

Parameter	Category 1	Category 2		Category 3	
	Material indented to be put in the mouth or toys with intended skin contact (longer than 30 s).	Materials not falling under category 1 with foreseeable contact to skin for longer than 30 s (long-term skin) or frequent contact.		Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 s (short-term skin contact).	
		Toy under 2009/48/EC	Other products under ProdSG	Toy under 2009/48/EC	Other products under ProdSG
Benzo(a)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(l,2,3-cd)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Acenaphthylene, Acenaphthene, fluorene,phenanthrene , pyrene, anthracene, fluoranthene, mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene, mg/kg	< 1	< 2		< 10	
Sum of 18 PAHs	<1	< 5	< 10	< 20	< 50

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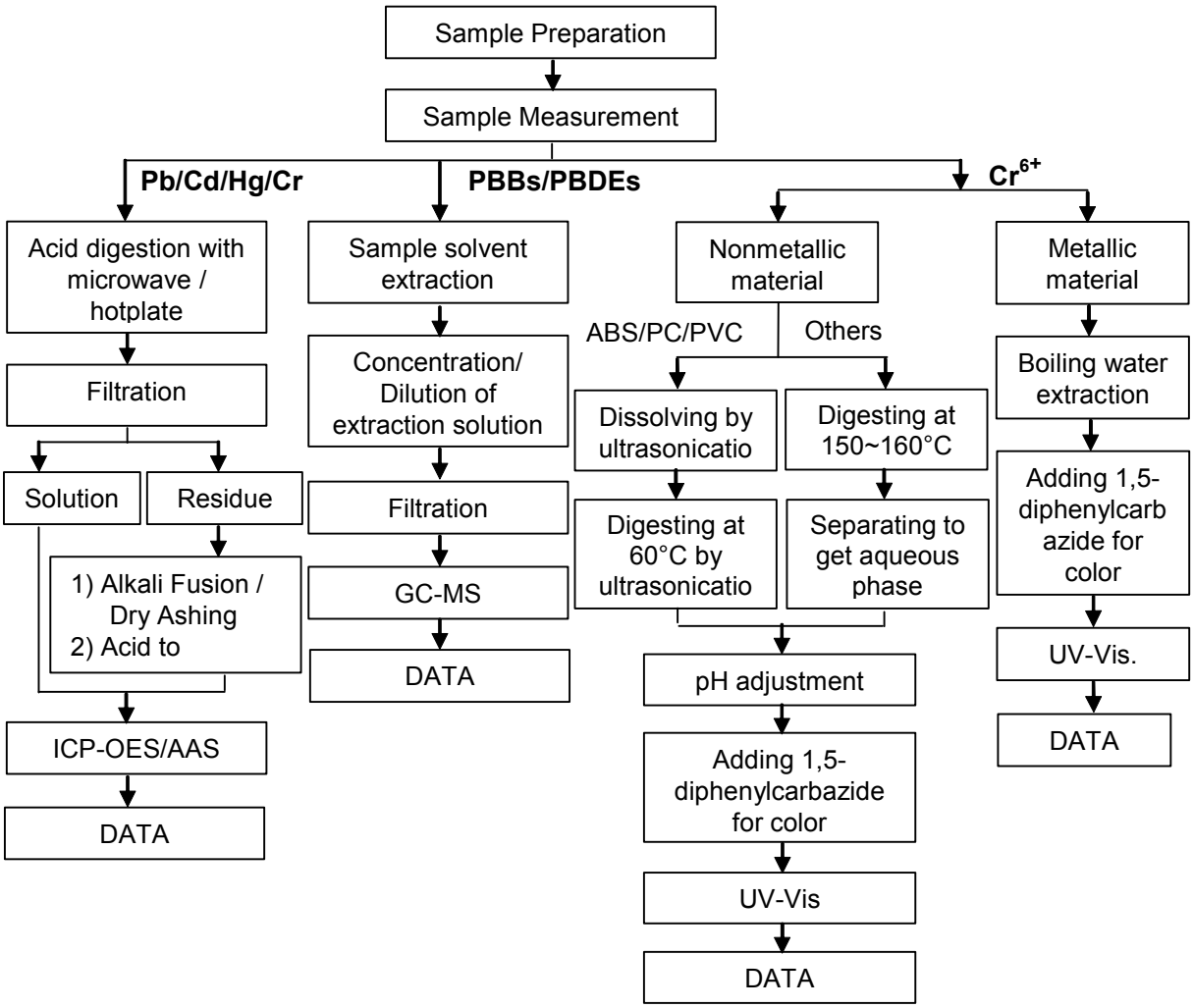
Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs Testing Flow Chart

1) Name of the person who made testing: Meria Jin/Gary Xu/ Xiaolong Yang/Sielina Song
2) Name of the person in charge of testing: Jan Shi/Myra Ma/Luna Xu/Shara Wang
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded)



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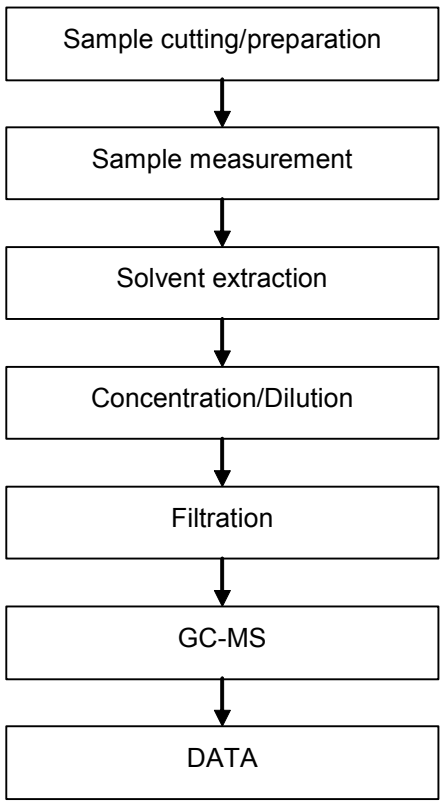
Phthalates Testing Flow Chart

1) Name of the person who made testing: Sherlock Gao
2) Name of the person in charge of testing: Jessy Huang



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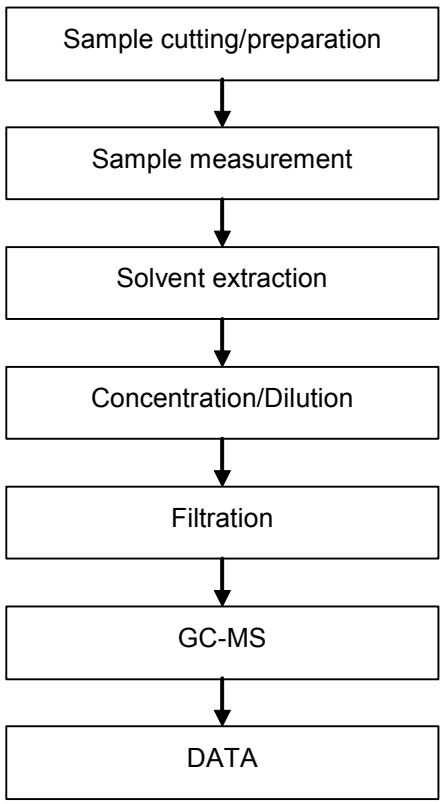
HBCDD Testing Flow Chart

1) Name of the person who made testing: Gary Xu
2) Name of the person in charge of testing: Myra ma



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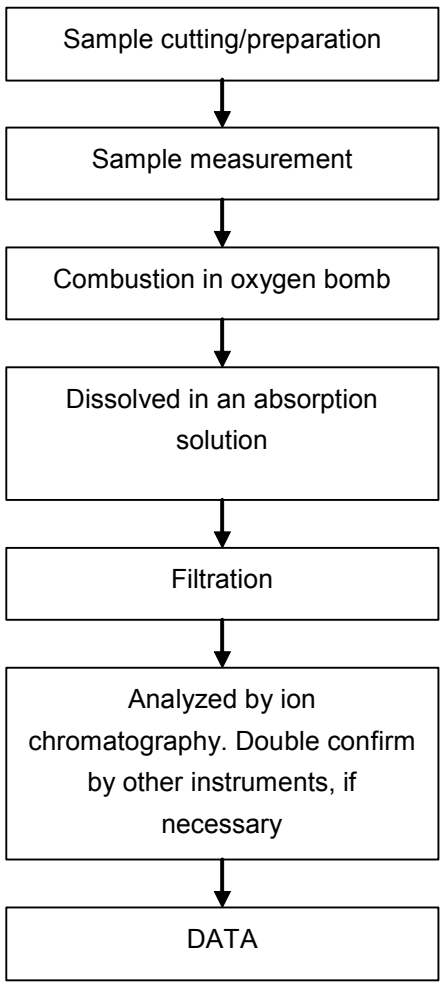
Halogen Testing (oxygen bomb) Flow Chart

1) Name of the person who made testing: Kevin Xu
2) Name of the person in charge of testing: Sisily Yin



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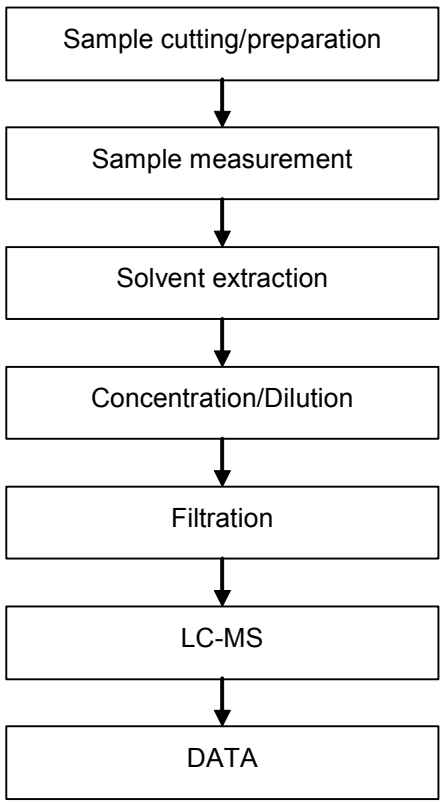
PFOS/PFOA Testing Flow Chart

1) Name of the person who made testing: Jane Yang
2) Name of the person in charge of testing: Judy Li



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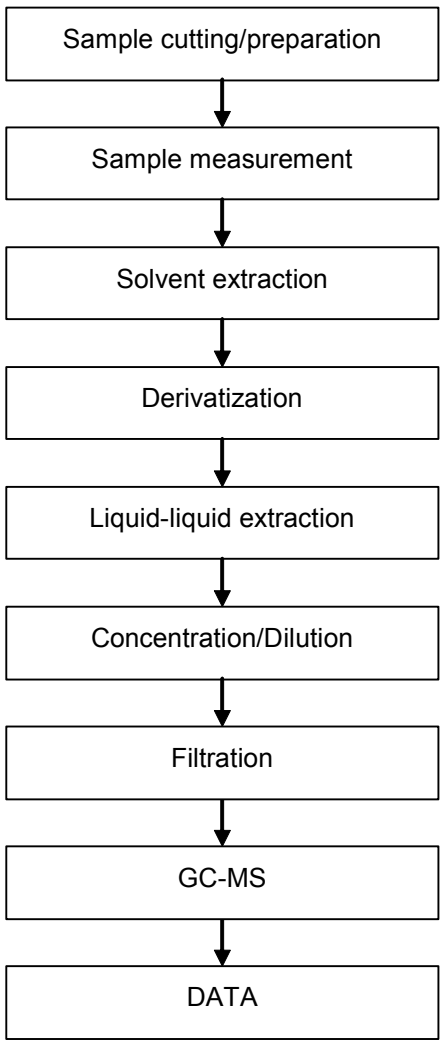
TBBP-A Testing Flow Chart

1) Name of the person who made testing: Gary Xu
2) Name of the person in charge of testing: Myra ma



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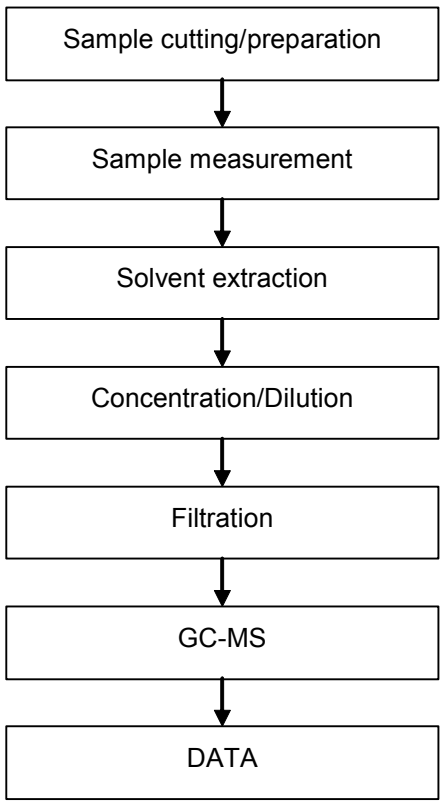
PAHs Testing Flow Chart

1) Name of the person who made testing: Sherlock Gao
2) Name of the person in charge of testing: Jessy Huang



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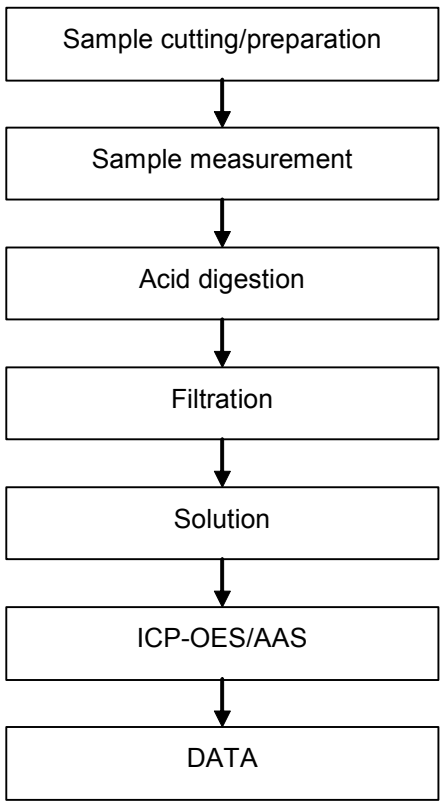
Elements Testing Flow Chart

1) Name of the person who made testing: Meria Jin/Sielina Song
2) Name of the person in charge of testing: Luna Xu/Jan Shi



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