

Specification For Approval

Date: 2014 / 08 / 15

File No.: 140815001

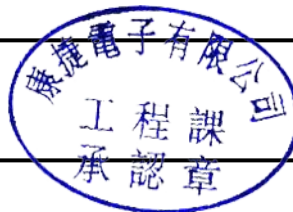
Version: 1.0

Customer : 研華股份有限公司

Customer P/N : /

INVAX P/N : AN2400-6710BRS

Description : Antenna



Cortec Checked By:
Customer Approved By:



INVAX System Technology Corp.
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Taipei, TAIWAN

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Product Number: AN2400-6710BRS

Product Name: Antenna



1. Revision History


Revision	Date	Change Notification	Description
1.0			

Product Number: AN2400-6710BRS

Product Name: Antenna



2. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz
S.W.R.	<= 2.0 Tested by network analyzer
Peak Gain	3.5 dBi
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	PCB
Material of Plastic	ABS
Cable Type	RG-178
Connector Type	SMA Male Reverse
C. Environmental	
Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 80 °C
Antenna Color Storage life	< 2 year

Product Number: AN2400-6710BRS

Product Name: Antenna



3. Characteristics and Reliability Test

Test Items 測試項目		Test Condition and Procedure 測試方法	Requirements 要求	Result 結果
C1	V.S.W.R. 電壓駐波比	Set DUT on Network Analyzer; make individual calibration to test 設置網路分析儀參數進行測試	Directive DUT specification 符合待測物規範	OK
C2	Insertion Loss 插入損失	Set DUT on Network Analyzer; make individual calibration to test 設置網路分析儀參數進行測試	Directive DUT specification 符合待測物規範	N/A
C3	Antenna Gain 天線增益	Set DUT on Antenna Chamber; make individual calibration to test 設置天線暗室參數進行測試	Directive DUT specification 符合待測物規範	OK
C4	Voltage Breakdown 耐電壓	Test voltage should be applied between insulated portions, or between ground as specified. 在绝缘部分测试电压,或指定接地面之间	Max Voltage ≥ 500 V or directive material specification 最大電壓 ≥ 500 V 或符合材料規範	N/A
C5	Insulation Resistance 絕緣阻抗	Set Voltage: 500 ± 50 V; between the insulated portions, or between ground as specified. 設置電壓 500 ± 50 V,在绝缘部份測試或指定接地面之间	Resistance ≥ 500 M ohm or directive material specification 阻抗 ≥ 500 M ohm 或符合材料規範	N/A
C6	Contact Resistance 接觸阻抗	Air Temp: 26°C ; measured with test equipment 室溫 26°C , 指定量測設備	Directive material specification 符合材料規範	N/A
M1	Vibration 震動	GB / T2423.48-2008 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz 3 directions; 2 hours for each direction 振幅 1.5mm ; 頻率 20~80~20Hz ; 3 個方向各 2H	1. No Visual Damage 2. Frequency Tol. $\leq 5\%$ 無明顯外觀不良; 頻率偏移 $\leq 5\%$	OK
M2	Random Drop 跌落	GB / T2423.8-1995 Single : Height: 1.0 Meter; 3 directions; 1 time for each direction 單支天線, 高 1m ; 3 個方向各 1 次	1. No parts separated 、 fracture 2. Frequency Tol. $\leq 5\%$ 產品無脫落、斷裂; 頻率偏移 $\leq 5\%$	OK
		Packing : Height: 0.76 Meter; 1 corner, 3 edges, 6 surface 包裝 : 高 0.76m , 一角、三棱、六面各一次		OK
		Antenna+Machine: Height: 0.76 Meter; 1 corner, 3 edges, 6 surface. 整機 : 高 0.76m , 一角、三棱、六面各一次		N/A

Product Number: AN2400-6710BRS

Product Name: Antenna



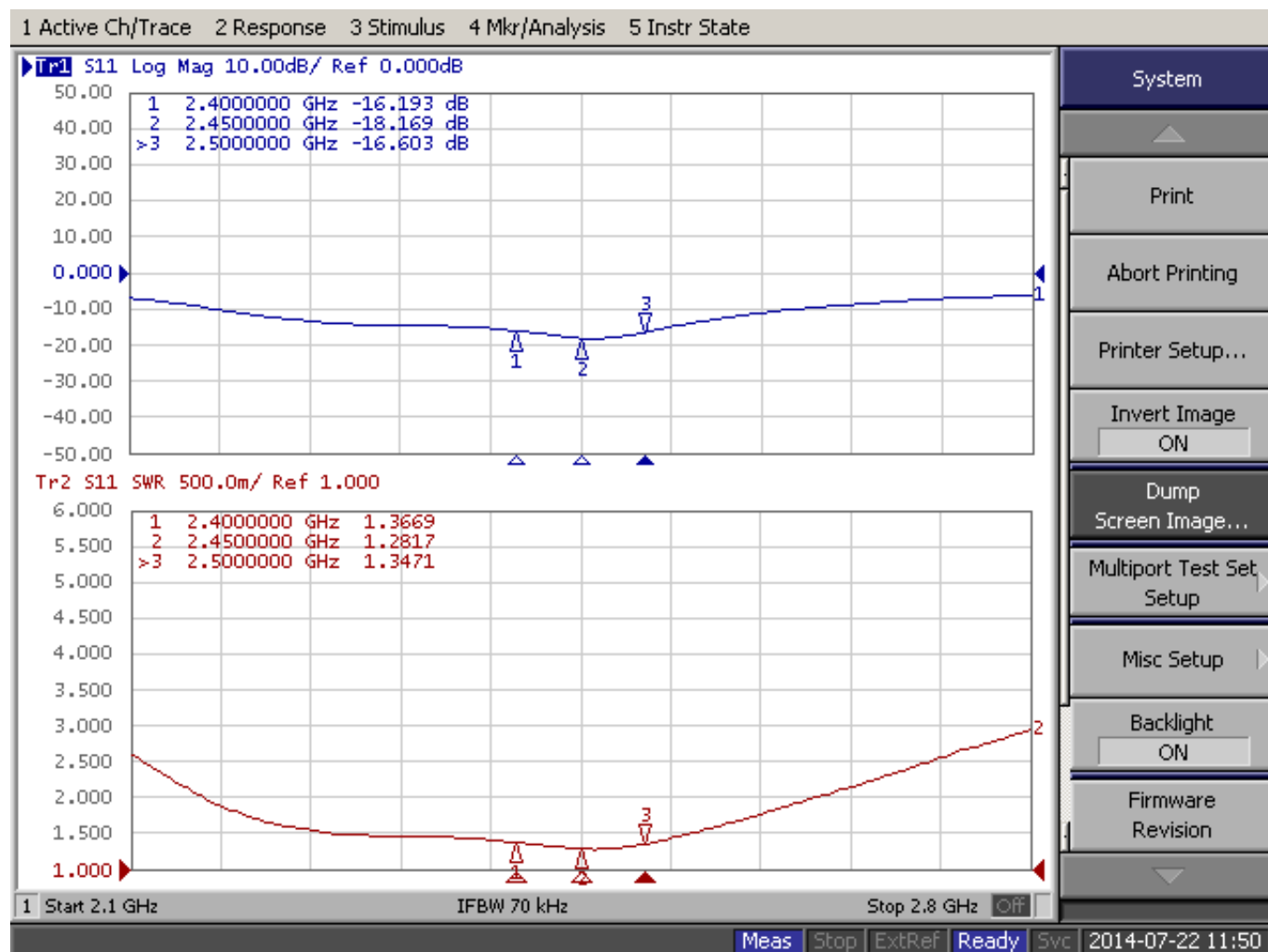
M3	Solderability 可焊性	GB / T2423.28-2005 Temp: 260±5° C;Duration: 5 seconds 溫度 260±5° C;持續 5 秒	Tin evenly on full 上錫均勻飽滿	N/A
M4	Pull Test 拉力	Holding with individual specification; force applied to axis of terminal .單獨定義產品端子拉力	1. Directive DUT specification 2. Frequency Tol.≤5% 符合待測物規範;頻率偏移≤5%	OK
M5	Torque Test 扭力	Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal 單獨定義產品端子之順時針及逆時針扭力	1. Directive DUT specification 2. Frequency Tol.≤ 5% 符合待測物規範;頻率偏移≤5%	OK
M6	Dimension 尺寸	Inspection of dimension, color, material, package, surface process.检查尺寸,颜色,材料,包装,表面處理	Directive DUT specification 符合待測物規範	OK
E1	Waterproof 防水	With Reference to IEC 60529 // IP Code Definition 參考 IEC60529 IP 定義	Directive DUT specification 符合待測物規範	N/A
E2	Salt Spray 鹽霧	GB / T 2423.17-2008 Temp: 35°C; RH: ≥ 95%; NaCl solution: ≥ 5%;Time: 24H 溫度 35°C ; 濕度≥95%;鹽水濃度≥5% ; 測試 24H	1. No Visual Damage 2. Frequency Tol.≤5% 無明顯外觀不良;頻率偏移≤5%	OK
E3	Temperature and Humidity Chamber 恒溫恒濕	GB / T 2423.3-2006 Temp: 80°C / 12 H; -40°C / 12H RH: ≥ 90%; Time: 24H 溫度 80°C 測試 12H 轉-40°C 測試 12H; 濕度≥ 90% ; 時間 24H	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5% 恢復 2H 后, 無明顯外觀不良;頻率偏移≤5%	OK
E4	Thermal Shock 冷熱衝擊	GB / T 2423.22 - 2008 - 40°C (30 minutes) to + 80°C (30 minutes) ; Cycles: 24 - 40°C 測試 30 分轉 80°C 測試 30 分爲一個週期; 共 24 週期	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5% 恢復 2H 后, 無明顯外觀不良;頻率偏移≤5%	OK
E5	Aging test 老化	GB / T 2423.2 - 2008 Temp: 80°C; Time: 24 hours 溫度 80°C , 測試 24H	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5% 無明顯外觀不良;頻率偏移≤5%	OK
E6	High Temp. 高溫	Temp. 270±10°C ; Times : 120 seconds 溫度 270±10°C , 測試時間 120 秒	No Visual Damage 無明顯外觀不良	N/A
R1	RoHS	With Reference to IEC 62321:2008 with flow chart 參考 IEC 62321 測試流程	Directive RoHS 2011/65/EU 符合 RoHS 2011/65/EU 標準	OK
R2	PFOS	With Reference to USA EPA 3550C:1996 by LC/MS 參考 USA EPA 3550C 測試流程	Directive RoHS 2006/122/EC 符合 RoHS 2011/65/EU 標準	OK

Product Number: AN2400-6710BRS

Product Name: Antenna



4. Antenna - S Parameter Test Data

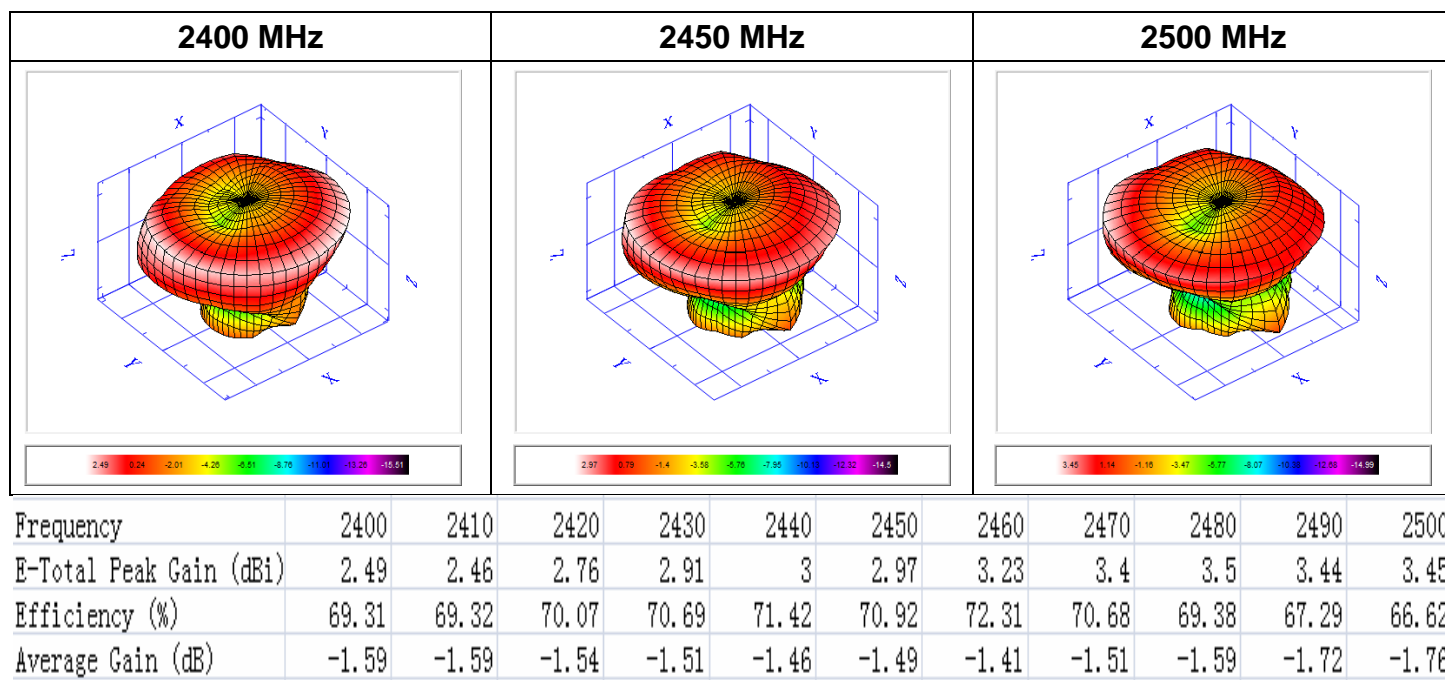


Product Number: AN2400-6710BRS

Product Name: Antenna



5. Antenna - Radiation Pattern Test Data



6. Mechanical Drawing

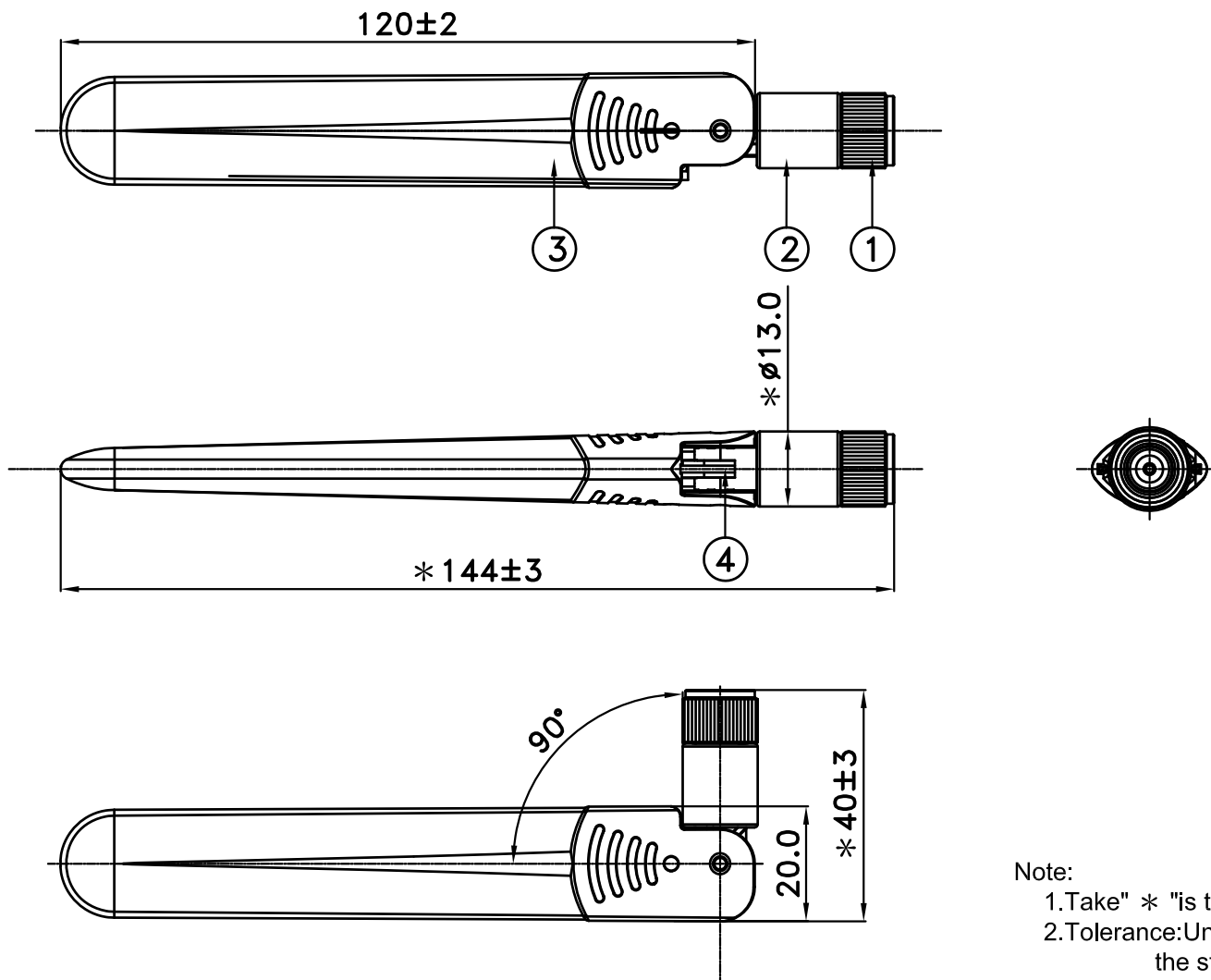
See attached files

7. Material Description and RoHS Test Report

See attached files

RoHS

Compatible



Note:

- 1.Take " * "is the important dimension.
- 2.Tolerance:Unmarked tolerance refer to the standard tolerance please.

4	R-RG-178U-03	Coaxial Cable	RG178U	Red	1
3	AN67-01B	Body	ABS	Black	1
2	BODY1-AN67-01B	Body1	ABS	Black	1
1	SMA194-CCR5AN19-B	SMA公頭母針	Cu	Black	1
No.	Part Number	Name	Material	Finish	Q'ty

Invax System Group.

Cortec

Cortec Technology Inc.


Http://www.invaxsystem.com
E-mail:info@invax.com.tw

Tel :886-2-27885218
Fax:886-2-27831658

TITLE: AN67 Type Antenna

PART NO.: AN2400-6710BRS

CUSTOMER P/N: /

APP BY	CHK BY	RF BY	DES BY		Tolerance
Grant 2014/08/04	Jack 2014/08/04	SiFei 2014/08/04	LJHUA 2014/08/14	UNITS: mm	X.X ±0.5
				SCALE: /	X.XX ±0.2
				REVISION: A	X° ±1

Date : 2014/08/14

Page : 1 of 1

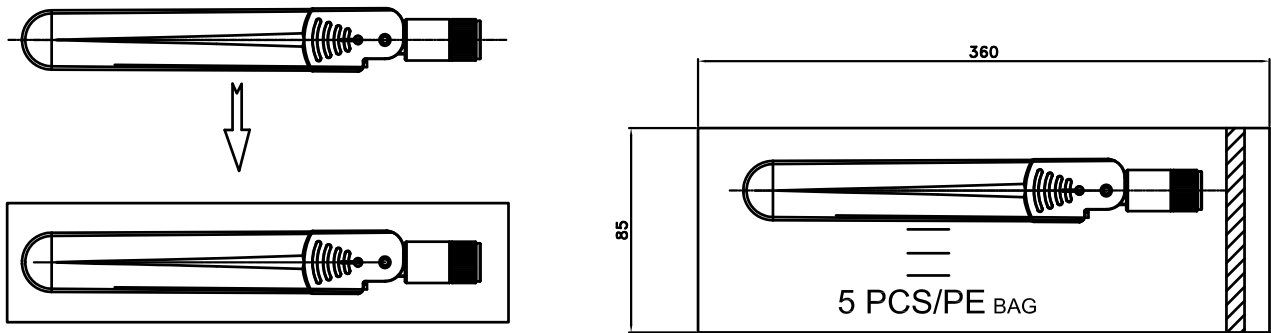
Part Number : AN2400-6710BRS

Revision : A

Name: AN67 Type Antenna

Customer :

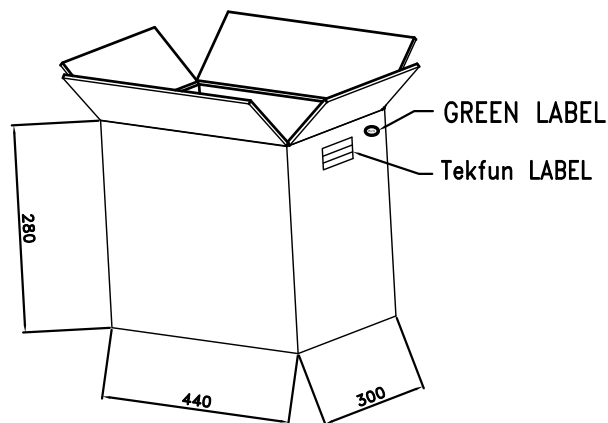
1. WITH THE ANT INTO THE PE BAG



R-STI-BAG-20040

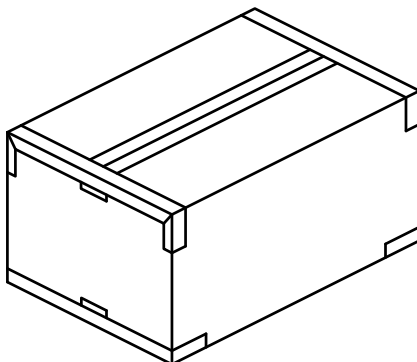
R-PE-BAG-85360

2. PACKING

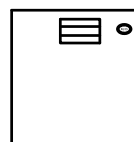


500PCS / CARTON

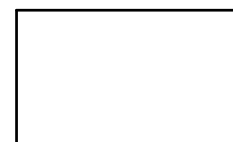
3. SEALING



SIDE



FRONT



UNITS: mm

APPROVED BY: GrantCHECKED BY: JACKDESIGNED BY: LJHUA

SGS 台灣網站 → http://twap.sgs.com/sgsrsts/chn/cheres_tw.asp
SGS 大陸網站 → http://rsts.cn.sgs.com/chn/cheres_cn.asp
SGS 韓國網站 → http://rohs.kr.sgs.com/sgsrsts/en/cheres_en.asp

COR/F-G-47a

請輸入以下報告正確資料及檢查碼以便查核

- 1. 報告編號
- 2. 報告日期 (YYYY/MM/DD)
- 3. 產品名稱 (輸入前 10 個字不含空白)
- 4. 圖示檢查碼 (依指示畫面)



物料中HSF對象物質含量調查表

康捷電子有限公司	
填表：	時麗
部門：	研發部
職務：	文員

物料名稱：AN2400-6710BRS

序號	物料型號	物料各構成名稱	各構成物料的材料	測試報告裡RoHS對應物質測試結果						檢測報告編號	測試日期	測試名稱	測試機構名稱
				Cd	Pb	Hg	Cr(VI)	PBBs	PBDEs				
1	BODY1-AN67-01B	Body1	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	10044908 034	2014.01.02	ABS-757	TuvRheinland
2	AN67-01B	Body	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	10044908 034	2014.01.02	ABS-757	TuvRheinland
3	SMA194-CCR5AN19-B	SMA Male	銅	36	26662	N.D.	Negative			CANEC1408043401	2014.05.30	C3604 Copper bar	SGS
4	PB-AN67-12FB	PCB	FR4	N.D.	6	N.D.	N.D.	N.D.	N.D.	SHAEC1325611207	2014.01.06	Halogen free laminate	SGS
5	R-RG-178U-03	Cable (RG178)	FEP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	RHS05F011891001E	2013.08.26	电线电缆料	CTI
6			PTFE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	RHS05F011891002E	2013.08.26	电线电缆料	CTI
7			镀银铜丝	N.D.	N.D.	N.D.	Negative	N.D.	N.D.	RHS05F011891004E	2013.08.26	电线电缆料	CTI
8			鍍錫銅	N.D.	N.D.	N.D.	Negative	N.D.	N.D.	RHS05F011891003E	2013.08.26	电线电缆料	CTI

根據測試報告如實填寫鉛、鎘、汞、六價鉻、PBBs和PBDEs六項禁用物質的含量
包裝材料中鉛、鎘、汞、六價鉻總含量不超過100ppm，鎘的允許濃度為5ppm
歐盟ROHS指令豁免條款2009/95/BC、鋼中合金元素中的鉛含量達0.35%、鋁含量達0.4%、銅合金中的鉛含量達4%

Prüfbericht - Nr.: 10044908 034			Seite 1 von 2		
<i>Test Report No.:</i>			<i>Page 1 of 2</i>		
Auftraggeber:		Chi Mei Corporation			
<i>Client:</i>		59-1, San Chia, Jen Te, Tainan City 71702, Taiwan, R.O.C.			
Gegenstand der Prüfung: ACRYLONITRILE-BUTADIENE-STYRENE COPOLYMER					
<i>Test Item:</i>					
Bezeichnung:		POLYLAC® PA-757 / Nature			
<i>Identification:</i>					
Anlieferungszustand:		apparent good		Eingangsdatum: 2013-12-16	
<i>Delivery condition:</i>				<i>Date of Receipt:</i>	
Prüfart:		TÜV Rheinland Hong Kong Ltd.			
<i>Testing location:</i>					
Prüfgrundlage:		According to RoHS (recast): Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, 2011/65/EU:			
<i>Test specification:</i>		Total Content of Lead, Cadmium, Mercury, Chromium VI, Polybrominated Biphenyls, Polybrominated Diphenyl Ethers			
Prüfergebnis:		According to the kind and extend of tests performed the above mentioned test item passed the test specification.			
<i>Test result:</i>					
geprüft: tested by:			kontrolliert: checked by:		
 2014-01-02 Anne Chen /Coordinator			 2014-01-02 Carl Chang /Department Manager		
Datum	Name/Stellung	Unterschrift	Datum	Name/Stellung	Unterschrift
<i>Date</i>	<i>Name/Position</i>	<i>Signature</i>	<i>Date</i>	<i>Name/Position</i>	<i>Signature</i>
Sonstiges/ Other Aspects:					
Test period: 2013-12-16 – 2014-01-02					
Abkürzungen: ok / P = entspricht Prüfgrundlage fail / F = entspricht nicht Prüfgrundlage n.a. / N = nicht anwendbar			Abbreviations: ok / P = passed fail / F = failed n.a. / N = not applicable		
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i>					



Test Report No. : 10044908 034 2014-01-02
Customer : Chi Mei Corporation
Test Method : Cd, Pb, Hg, Cr VI, PBB/PBDE – determination with reference to EN 62321:2009

Sample	LoD	POLYLAC® PA-757 / Nature plastic / light yellow TCL131216-39
Material		
Lab.-No.		
Cadmium (Cd) mg/kg	2	n.d.
Lead (Pb) mg/kg	2	n.d.
Mercury (Hg) mg/kg	2	n.d.
Chromium VI (Cr VI) mg/kg	2	n.d.
PBBs mg/kg	10	n.d.
PBDEs mg/kg	10	n.d.

Notes:

- n.d. - not detected
- n.a. - not applicable
- LoD - Limit of Detection
- mg/kg is equal to ppm (parts per million)

	Cd	Cr(VI)	Pb	Hg	PBBs	PBDEs
Maximum permissible Limit acc. to 2011/65/EU (mg/kg)	100	1000	1000	1000	1000	1000

Test Sample



--- End of Test-Report ---



Test Report

No. CANEC1408043401

Date: 30 May 2014

Page 1 of 5

YIXING COPPER(NANHAI,FOSHAN)MANU FACTORY CO.,LTD

NO.18 NORTH PARK MID ROAD,ECONOMIC&TECHNOLOGY DEVELOPMENT ZORE,SHISHAN
TOWN,NANHAI DISTRICT,FOSHAN CITY,GUANGDONG PROVINCE,CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : C3604 Copper bar

SGS Job No. : CP14-026746 - GZ

Date of Sample Received : 26 May 2014

Testing Period : 26 May 2014 - 30 May 2014

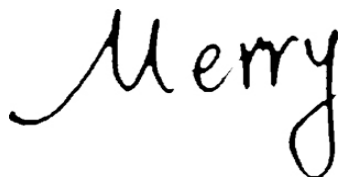
Test Requested : Selected test(s) as requested by client.

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

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

Conclusion : Based on the performed tests on submitted samples, the results of Lead,
Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS
Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Ltd.



Merry Lv
Approved Signatory



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Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Report

No. CANEC1408043401

Date: 30 May 2014

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN14-080434.001	Brassy metal

Remarks :

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

RoHS 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 62321:2008, determination of Hexavalent Chromium by spot test / Colorimetric Method using UV-Vis.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	36
Lead (Pb)	1,000	mg/kg	2	26662 ^{<1>}
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative

Notes :

- (1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II
- (2)◇Spot-test:
 Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;
 (The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be confirmed.)
- ◇Boiling-water-extraction:
 Negative = Absence of CrVI coating
 Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² sample surface area.
 Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.



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Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Report

No. CANEC1408043401

Date: 30 May 2014

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Remark<1>: According to the declaration from the client, Lead (Pb) in specimen is exempted by EU RoHS Directive 2011/65/EU based on: Copper alloy containing up to 4 % lead by weight.



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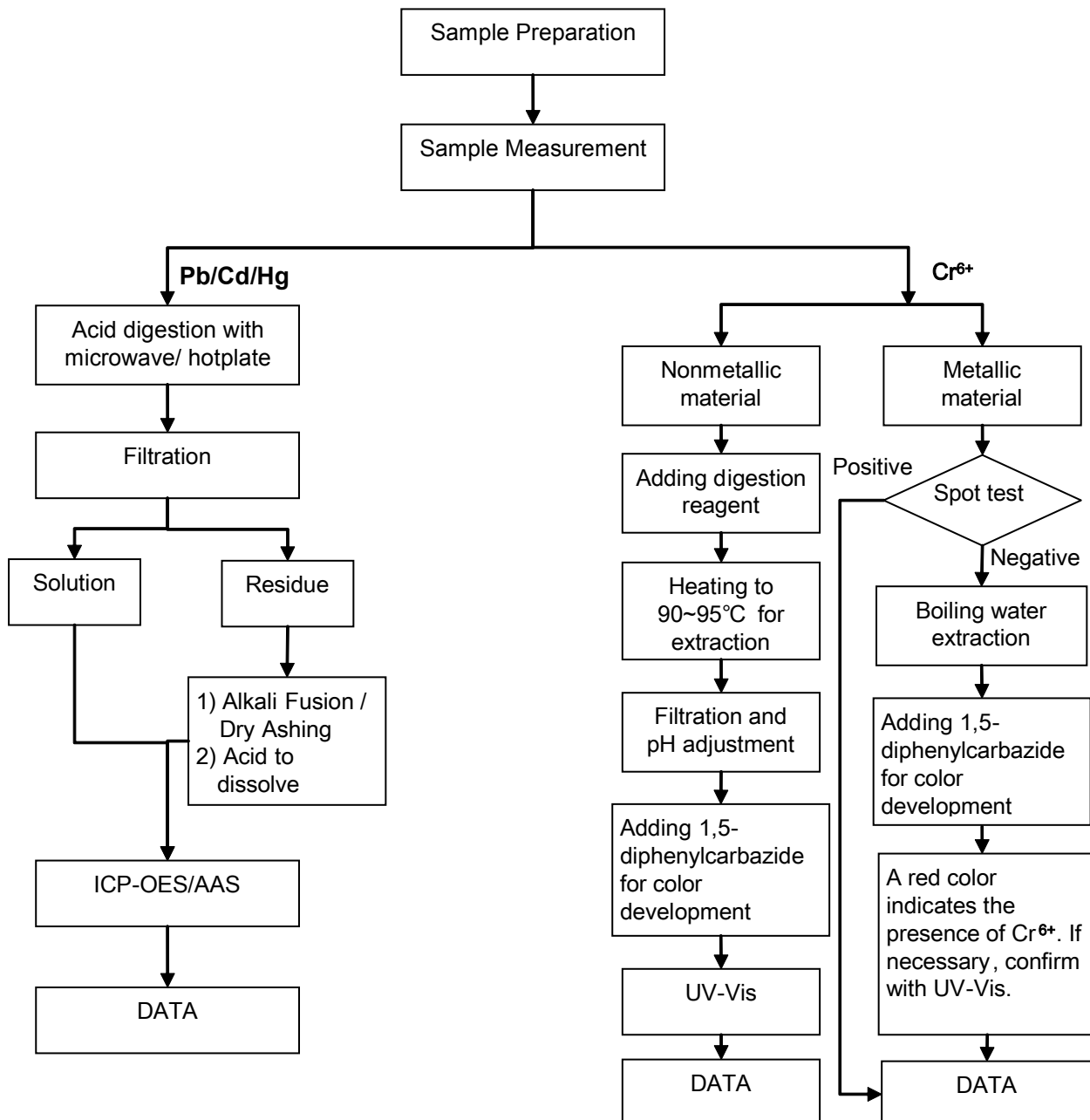
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RoHS Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr⁶⁺ test method excluded).



Test Report

No. CANEC1408043401

Date: 30 May 2014

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

Test Report

No. SHAEC1325611207

Date: 06 Jan 2014

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GOLDENMAX INTERNATIONAL TECHNOLOGY LTD./SHANGHAI GLOBAL ELECTRONIC LTD./INTERNATIONAL LAMINATE MATERIAL LTD./GOLDMAX INTERNATIONAL TECHNOLOGY (ZHUHAI) LTD.

33#, BAOSHENG ROAD. SONGJIANG AREA, SHANGHAI P.R CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Halogen free laminate

SGS Job No. : SP13-037739 - SH
 Date of Sample Received : 30 Dec 2013
 Testing Period : 30 Dec 2013 - 06 Jan 2014
 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 samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
 SGS-CSTC Ltd.



JJ Fan
 Approved Signatory



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Test Report

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA13-256112.004	Yellow solid sheet

Remarks :

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

RoHS 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 62321:2008, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
 - (5) With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	004
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	6
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	2	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



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>004</u>
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

Notes :

- (1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

Phthalates

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

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>004</u>
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
Diisononyl Phthalate (DINP)	28553-12-0/ 68515-48-0	%	0.010	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0/ 68515-49-1	%	0.010	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%	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



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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.

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

Asbestos

Test Method : With reference to NIOSH 9002:1994, Analysis was performed by Polarized light microscope (PLM).

Test Item(s)	CAS NO.	Unit	MDL	004
Actinolite	77536-66-4	%	0.1	Negative
Amosite	12172-73-5	%	0.1	Negative
Anthophyllite	77536-67-5	%	0.1	Negative
Chrysotile	12001-29-5/ 132207-32-0	%	0.1	Negative
Crocidolite	12001-28-4	%	0.1	Negative
Tremolite	77536-68-6	%	0.1	Negative

Notes :

(1) Negative = the absence of asbestos, Positive = the presence of asbestos.

Hexabromocyclododecane (HBCDD)

Test Method : Determination of HBCDD by GC-MS based on IEC 62321:2008.

Test Item(s)	Unit	MDL	004
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

Notes :

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC:



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Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid)

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

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>004</u>
Perfluorooctane Sulfonates (PFOS) and related Acid, Metal Salt and Amide	1000	mg/kg	10	ND
Perfluorooctanoic Acid (PFOA)	-	mg/kg	10	ND

Notes :

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



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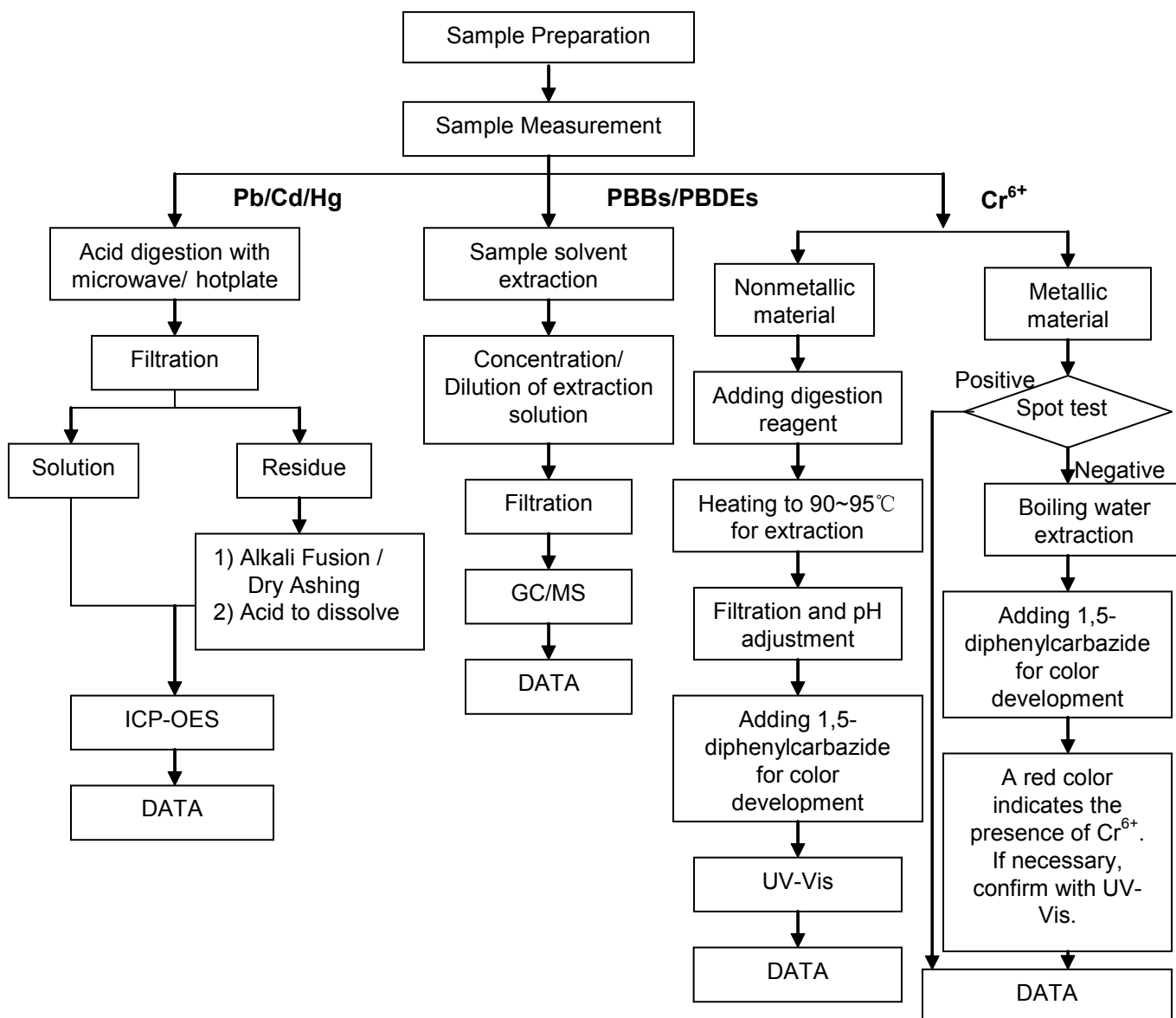
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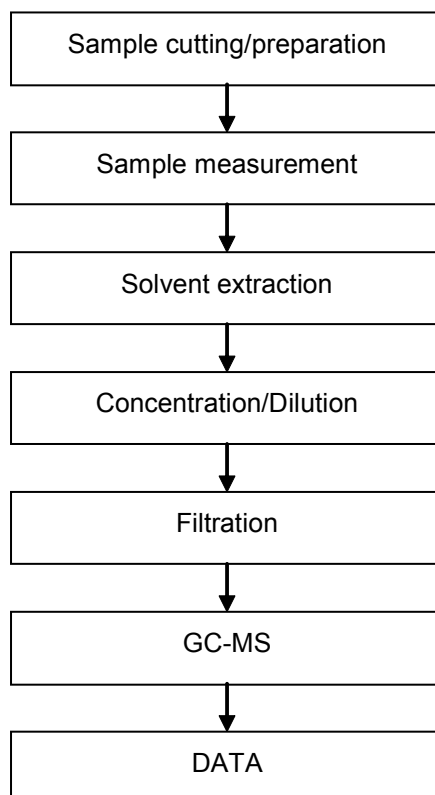
RoHS Testing Flow Chart

- 1) Name of the person who made testing: Jan Shi/Star Wang/Shara Wang/Gary Xu
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Jessy Huang
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ and PBBs/PBDEs test method excluded)



Phthalates Testing Flow Chart

- 1) Name of the person who made testing: Elyn Yao
- 2) Name of the person in charge of testing: Myra Ma



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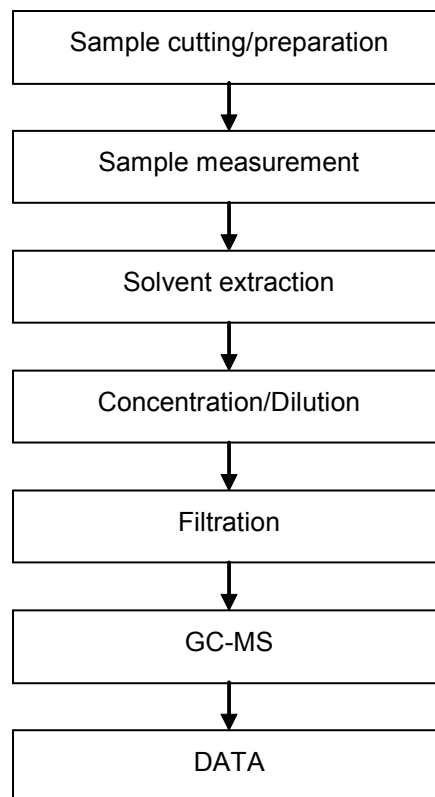
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HBCDD Testing Flow Chart

- 1) Name of the person who made testing: Gary Xu
- 2) Name of the person in charge of testing: Jessy Huang



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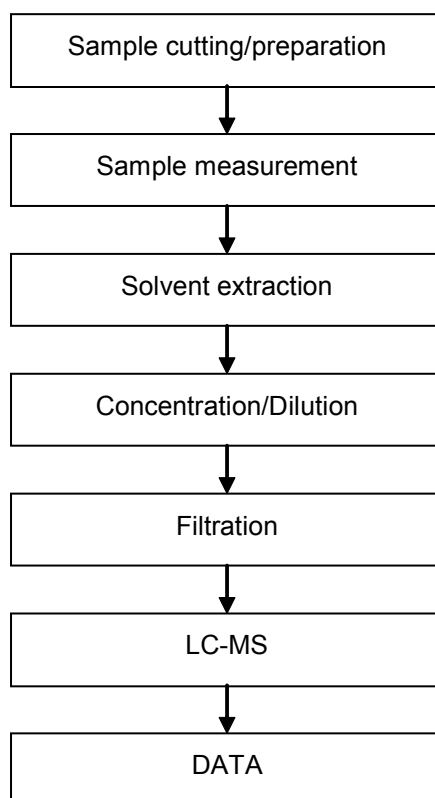
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PFOS/PFOA Testing Flow Chart

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



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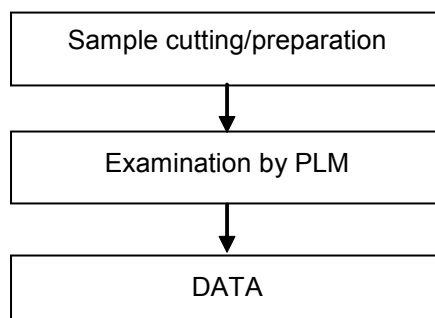
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Asbestos Testing Flow Chart

- 1) Name of the person who made testing: Anne Huang
- 2) Name of the person in charge of testing: Zirco Yu



Sample photo:



SGS authenticate the photo on original report only

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检测报告 Test Report

报告编号 RHS05F011891001E
Report No. RHS05F011891001E

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Address TAIPING STREET TAIPING TOWN XIANGCHENG, SUZHOU

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 电线电缆料
Sample Name Wire and cable materials
样品型号
Part No. FEP

样品接收日期 2013.08.22
Sample Received Date Aug. 22, 2013
样品检测日期 2013.08.22-2013.08.26
Testing Period Aug. 22, 2013 to Aug. 26, 2013

检测要求 根据客户要求, 对所提交样品中的六溴环十二烷(HBCDD), 铅(Pb), 镉(Cd), 汞(Hg), 六价铬(Cr(VI)), 多溴联苯(PBBs), 多溴二苯醚(PBDEs), 邻苯二甲酸酯进行测试。

Test Requested As specified by client, to test Hexabromocyclododecane (HBCDD), Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates 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 Chen Lijuan
批 准
Approved by Su Hongwei

Su Hongwei
Senior Laboratory Manager



审 核
Reviewed by Zhong Yijun
日 期
Date 2013.08.26

No. 1102121596

深圳市华测检测技术股份有限公司上海分公司
Centre Testing International Corporation Shanghai Branch
上海市浦东新区新金桥路1996号
No.1996, New Jinqiao Road, Pudong District, Shanghai, China

检测报告 Test Report

报告编号 RHS05F011891001E
Report No. RHS05F011891001E

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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(Pb) Lead(Pb)	IEC 62321:2008 Ed.1 Sec.8	ICP-OES
镉(Cd) Cadmium(Cd)	IEC 62321:2008 Ed.1 Sec.8	ICP-OES
汞(Hg) Mercury(Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
多溴二苯醚(PBDEs) Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
六溴环十二烷(HBCDD) Hexabromocyclododecane (HBCDD)	参考US EPA 3550C: 2007 Refer to US EPA 3550C:2007	GC-MS
邻苯二甲酸酯 Phthalates	参考EN 14372: 2004(E) Refer to EN 14372:2004(E)	GC-MS

检测结果 Test Result(s)

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
铅(Pb) Lead(Pb)	N.D.	2 mg/kg
镉(Cd) Cadmium (Cd)	N.D.	2 mg/kg
汞(Hg) Mercury(Hg)	N.D.	2 mg/kg
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	N.D.	2 mg/kg
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg

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九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

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

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
六溴环十二烷(HBCDD) Hexabromocyclododecane (HBCDD)	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检测限 MDL
邻苯二甲酸酯 Phthalates		
邻苯二甲酸二正丁酯(DBP) Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄酯(BBP) Benzylbutyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基己基)酯(DEHP) Bis(2-ethyl(hexyl)) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg

测试样品/部位描述 棕黄色塑料线皮
Tested Sample/Part Description Brown yellow plastic wire jacket

检测报告 Test Report

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Report No. RHS05F011891001E

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Page 4 of 8

注释: 对于检测铅, 镉, 汞之样品已完全溶解。

-N.D. = 未检出 (小于方法检测限)

-mg/kg= ppm = 百万分之几

Note: 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

备注: 报告编号中“E”表示此报告为中英文对照版本。

Remark: The end sign of report number E represents the bilingual version.

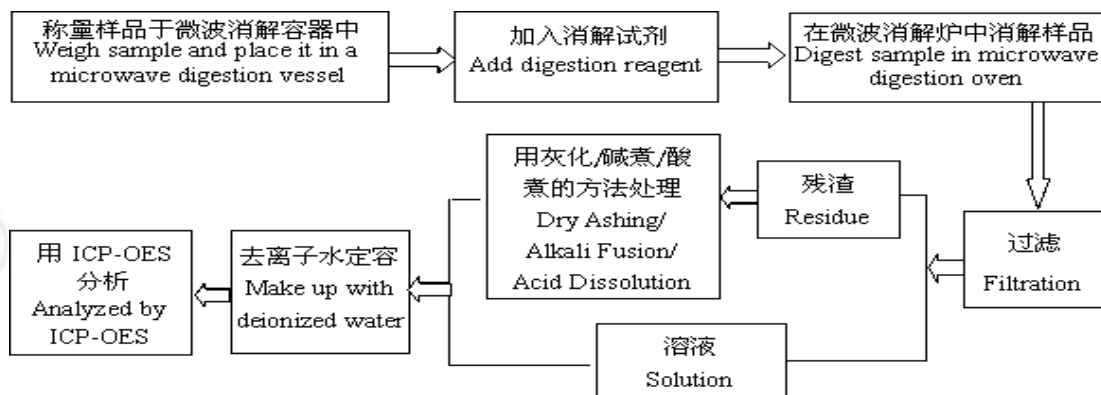
检测报告 Test Report

报告编号 RHS05F011891001E
Report No. RHS05F011891001E

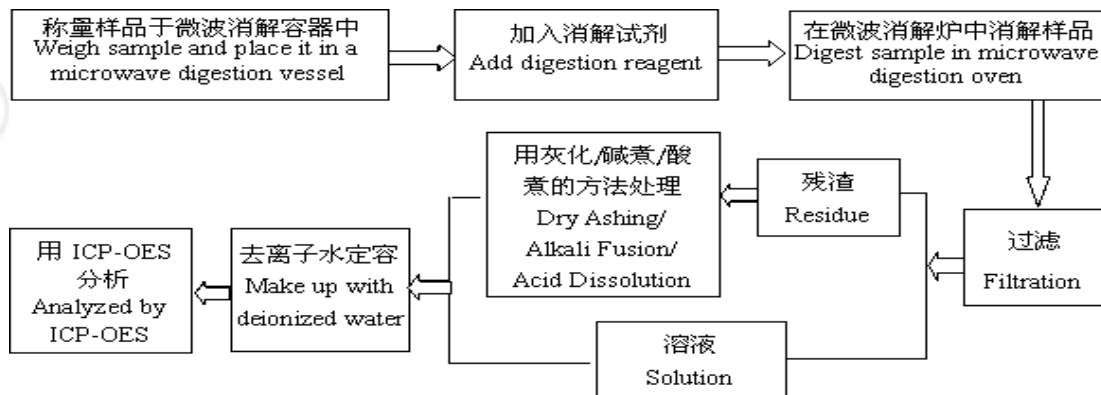
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检测流程 Test Process

1. 铅(Pb), 镉(Cd)
Lead(Pb), Cadmium(Cd)



2. 汞(Hg)
Mercury(Hg)

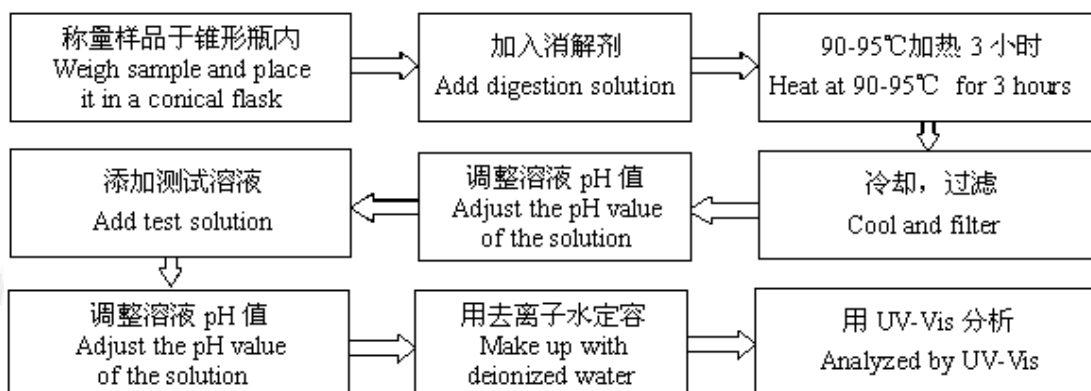


检测报告 Test Report

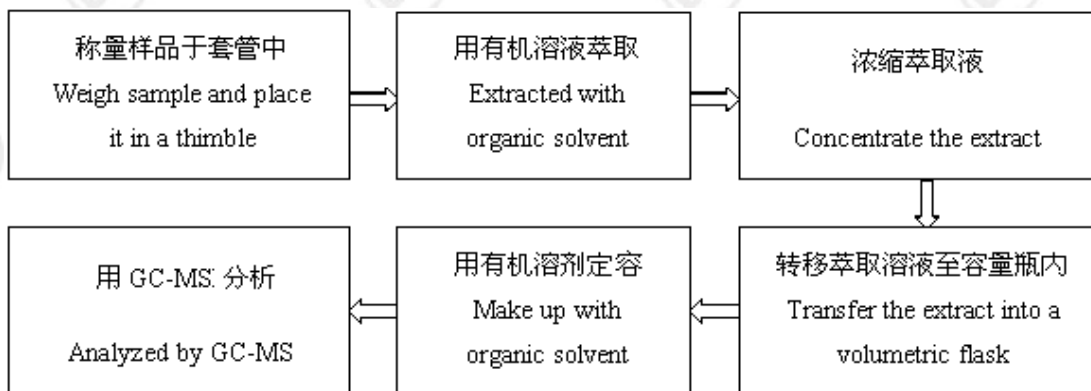
报告编号 RHS05F011891001E
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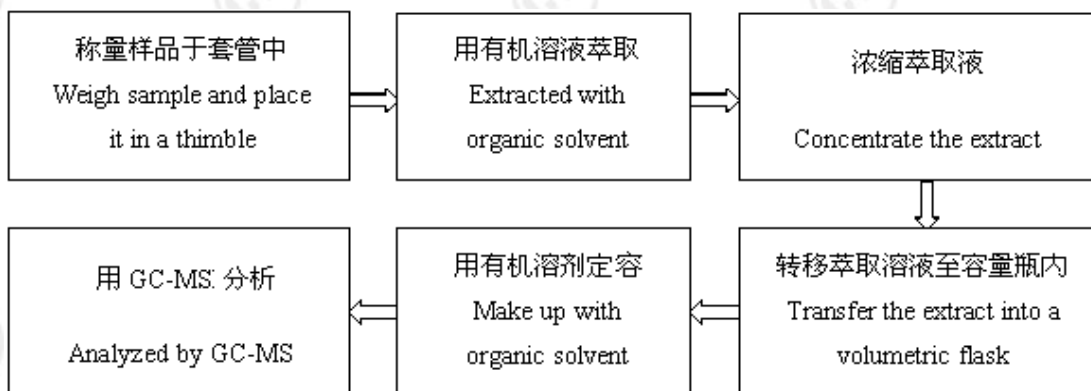
3. 六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))



4. 邻苯二甲酸酯 Phthalates



5. 多溴联苯(PBBs), 多溴二苯醚(PBDEs) Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)

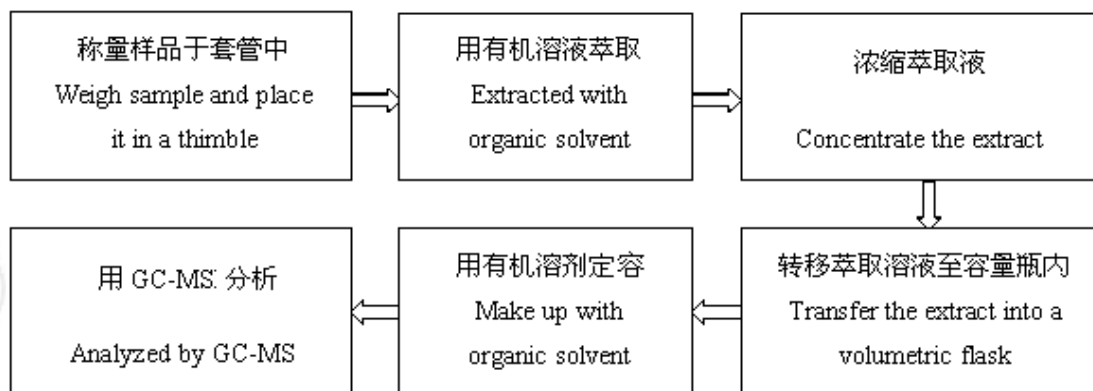


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6. 六溴环十二烷 (HBCDD)
Hexabromocyclododecane (HBCDD)



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Report No. RHS05F011891001E

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样品图片 Photo(s) of the sample(s)



报告结束
*** End of report ***

检测报告无批准人签字及“报告专用章”无效，本报告检测结果仅对受测样品负责。未经CTI书面同意，不得部分复制本报告。

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

检测报告 Test Report

报告编号 RHS05F011891002E
Report No. RHS05F011891002E

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申请单位 苏州市华诺线缆科技有限公司
Applicant SUZHOU HUANUO CABLE TECHNOLOGY CO., LTD
地址 苏州市相城区太平镇太平大街
Address TAIPING STREET TAIPING TOWN XIANGCHENG, SUZHOU

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 电线电缆料
Sample Name Wire and cable materials
样品型号 PTFE
Part No.

样品接收日期 2013.08.22
Sample Received Date Aug. 22, 2013
样品检测日期 2013.08.22-2013.08.26
Testing Period Aug. 22, 2013 to Aug. 26, 2013

检测要求 根据客户要求, 对所提交样品中的六溴环十二烷(HBCDD), 铅(Pb), 镉(Cd), 汞(Hg), 六价铬(Cr(VI)), 多溴联苯(PBBs), 多溴二苯醚(PBDEs), 邻苯二甲酸酯进行测试。

Test Requested As specified by client, to test Hexabromocyclododecane (HBCDD), Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates 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 Chen Lijuan
批 准
Approved by Su Hongwei

Su Hongwei
Senior Laboratory Manager



审 核
Reviewed by Zhong Yijun
日 期
Date 2013.08.26

No. 1102121596

深圳市华测检测技术股份有限公司上海分公司
Centre Testing International Corporation Shanghai Branch
上海市浦东新区新金桥路1996号
No.1996, New Jinqiao Road, Pudong District, Shanghai, China

检测报告

Test Report

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 Report No. RHS05F011891002E

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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(Pb) Lead(Pb)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES
镉(Cd) Cadmium(Cd)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES
汞(Hg) Mercury(Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
多溴二苯醚(PBDEs) Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
六溴环十二烷(HBCDD) Hexabromocyclododecane (HBCDD)	参考US EPA 3550C: 2007 Refer to US EPA 3550C:2007	GC-MS
邻苯二甲酸酯 Phthalates	参考EN 14372: 2004(E) Refer to EN 14372:2004(E)	GC-MS

检测结果 Test Result(s)

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
铅(Pb) Lead(Pb)	N.D.	2 mg/kg
镉(Cd) Cadmium (Cd)	N.D.	2 mg/kg
汞(Hg) Mercury(Hg)	N.D.	2 mg/kg
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	N.D.	2 mg/kg
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg

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九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

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

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
六溴环十二烷(HBCDD) Hexabromocyclododecane (HBCDD)	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检测限 MDL
邻苯二甲酸酯 Phthalates		
邻苯二甲酸二正丁酯(DBP) Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄酯(BBP) Benzylbutyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基己基)酯(DEHP) Bis(2-ethyl(hexyl)) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg

测试样品/部位描述 白色粉末
 Tested Sample/Part Description White powder

检测报告 Test Report

报告编号 RHS05F011891002E
Report No. RHS05F011891002E

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注释: 对于检测铅, 镉, 汞之样品已完全溶解。

-N.D. = 未检出 (小于方法检测限)

-mg/kg= ppm = 百万分之几

Note: 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

备注: 报告编号中“E”表示此报告为中英文对照版本。

Remark: The end sign of report number E represents the bilingual version.

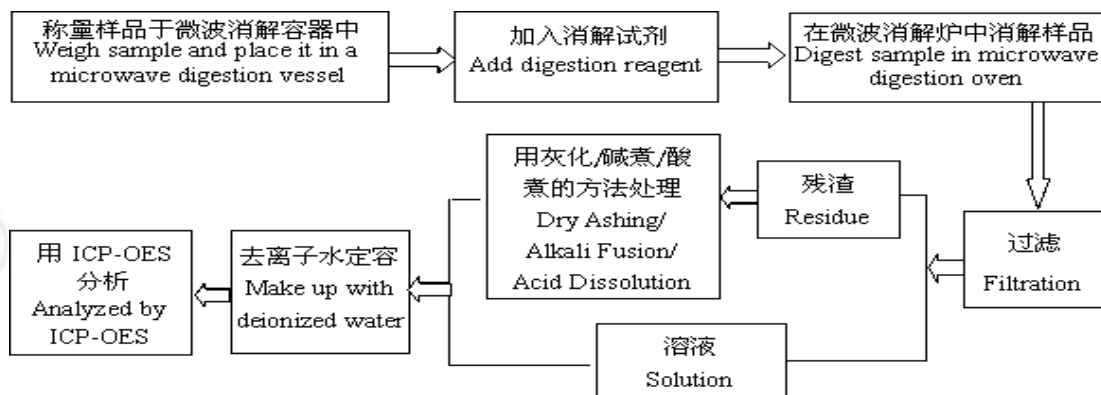
检测报告 Test Report

报告编号 RHS05F011891002E
Report No. RHS05F011891002E

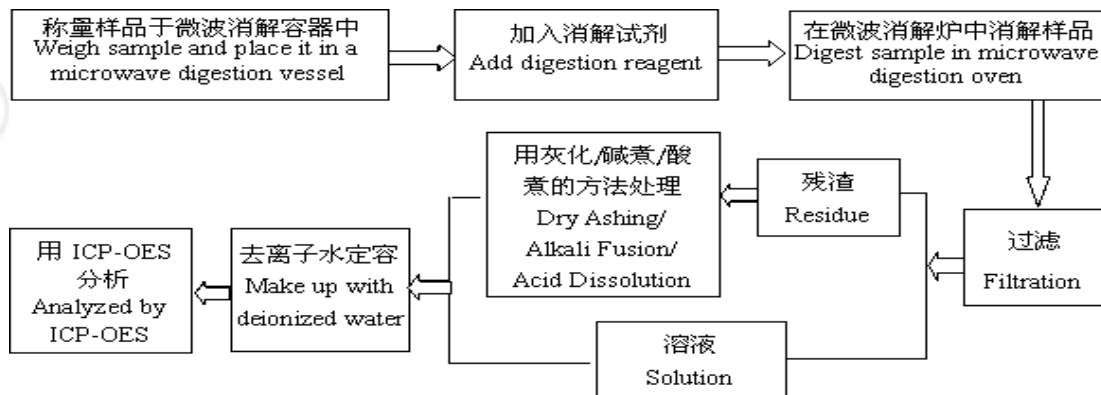
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检测流程 Test Process

1. 铅(Pb), 镉(Cd)
Lead(Pb), Cadmium(Cd)



2. 汞(Hg)
Mercury(Hg)

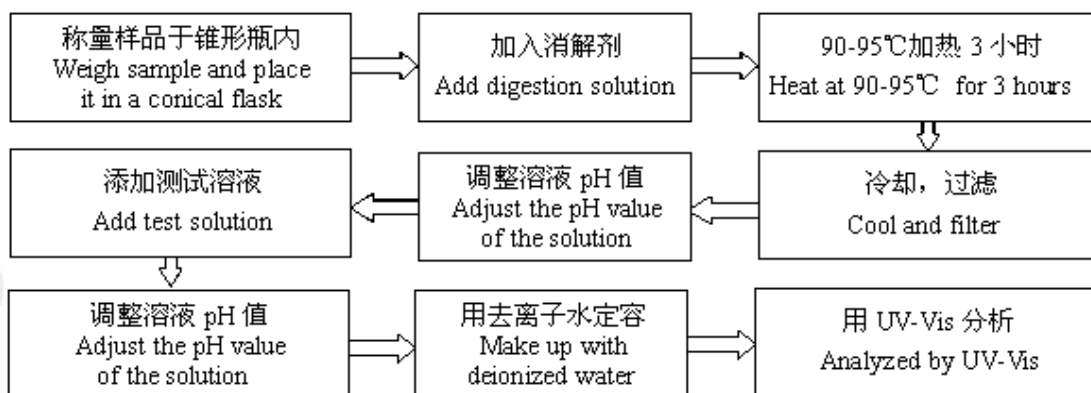


检测报告 Test Report

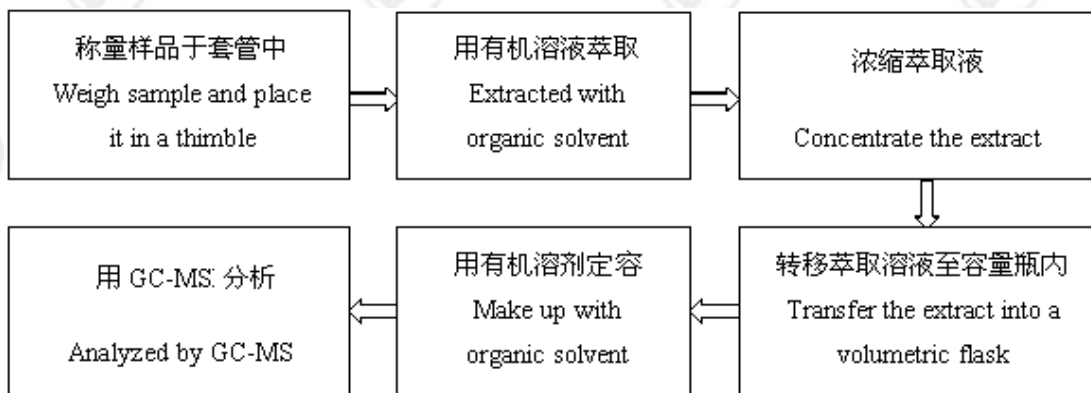
报告编号 RHS05F011891002E
Report No. RHS05F011891002E

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Page 6 of 8

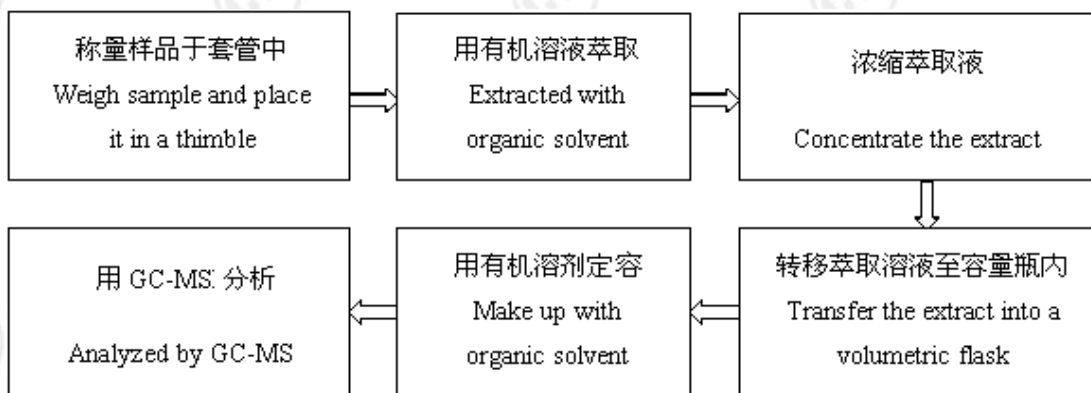
3. 六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))



4. 邻苯二甲酸酯 Phthalates



5. 多溴联苯(PBBs), 多溴二苯醚(PBDEs) Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)

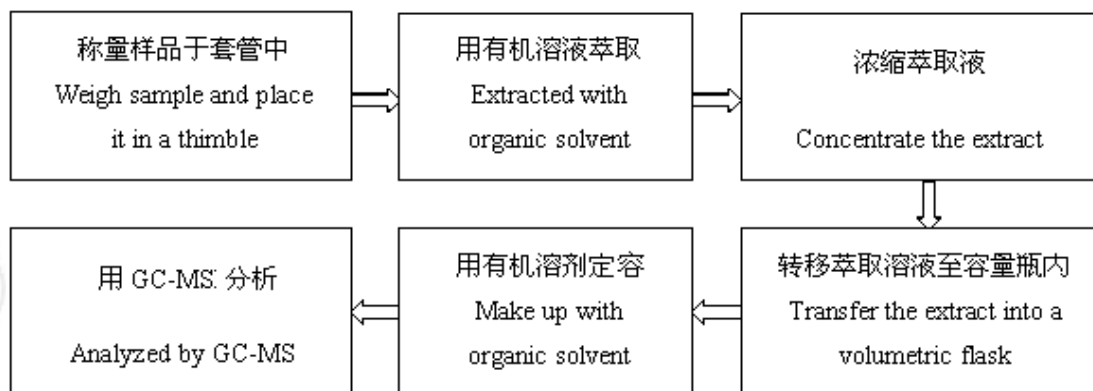


检测报告 Test Report

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Report No. RHS05F011891002E

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6. 六溴环十二烷 (HBCDD)
Hexabromocyclododecane (HBCDD)



检测报告 Test Report

报告编号 RHS05F011891002E
Report No. RHS05F011891002E

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Page 8 of 8

样品图片 Photo(s) of the sample(s)



报告结束
*** End of report ***

检测报告无批准人签字及“报告专用章”无效，本报告检测结果仅对受测样品负责。未经CTI书面同意，不得部分复制本报告。

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

检测报告 Test Report

报告编号 RHS05F011891004E
Report No. RHS05F011891004E

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Page 1 of 8

申请单位 苏州市华诺线缆科技有限公司
Applicant SUZHOU HUANUO CABLE TECHNOLOGY CO., LTD
地 址 苏州市相城区太平镇太平大街
Address TAIPING STREET TAIPING TOWN XIANGCHENG, SUZHOU

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 电线电缆料
Sample Name Wire and cable materials
样品型号 镀银铜丝
Part No. Silver-plated copper wire

样品接收日期 2013.08.22
Sample Received Date Aug. 22, 2013
样品检测日期 2013.08.22-2013.08.26
Testing Period Aug. 22, 2013 to Aug. 26, 2013

检测要求 根据客户要求, 对所提交样品中的六溴环十二烷(HBCDD), 铅(Pb), 镉(Cd), 汞(Hg), 六价铬(Cr(VI)), 多溴联苯(PBBs), 多溴二苯醚(PBDEs), 邻苯二甲酸酯进行测试。

Test Requested As specified by client, to test Hexabromocyclododecane (HBCDD), Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates 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 Chen Lijuan
批 准
Approved by Su Hongwei

Su Hongwei
Senior Laboratory Manager



审 核
Reviewed by Zhong Yijun
日 期
Date 2013.08.26

No. 1102121596

深圳市华测检测技术股份有限公司上海分公司
Centre Testing International Corporation Shanghai Branch
上海市浦东新区新金桥路1996号
No.1996, New Jinqiao Road, Pudong District, Shanghai, China

检测报告

Test Report

报告编号 RHS05F011891004E
 Report No. RHS05F011891004E

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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(Pb) Lead(Pb)	IEC 62321:2008 Ed.1 Sec.9	ICP-OES
镉(Cd) Cadmium(Cd)	IEC 62321:2008 Ed.1 Sec.9	ICP-OES
汞(Hg) Mercury(Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex B	UV-Vis
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
多溴二苯醚(PBDEs) Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
六溴环十二烷(HBCDD) Hexabromocyclododecane (HBCDD)	参考US EPA 3550C: 2007 Refer to US EPA 3550C:2007	GC-MS
邻苯二甲酸酯 Phthalates	参考EN 14372: 2004(E) Refer to EN 14372:2004(E)	GC-MS

检测结果 Test Result(s)

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
铅(Pb) Lead(Pb)	N.D.	2 mg/kg
镉(Cd) Cadmium (Cd)	N.D.	2 mg/kg
汞(Hg) Mercury(Hg)	N.D.	2 mg/kg
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	阴性 Negative	/
测试项目 Test Item(s)	结果 Result	方法检测限 MDL
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg

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九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

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

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
六溴环十二烷(HBCDD) Hexabromocyclododecane (HBCDD)	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检测限 MDL
邻苯二甲酸酯 Phthalates		
邻苯二甲酸二正丁酯(DBP) Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄酯(BBP) Benzylbutyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基己基)酯(DEHP) Bis(2-ethyl(hexyl)) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg

测试样品/部位描述
 Tested Sample/Part Description

银白色金属丝
 Silvery white metal wire

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注释: 对于检测铅, 镉, 汞之样品已完全溶解。

-N.D. = 未检出 (小于方法检测限)

-mg/kg= ppm = 百万分之几

-阴性表示不含有六价铬, 即由表面积为50cm²的样品所萃取出来的溶液中的六价铬的浓度小于0.02mg/kg

Note: 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

-Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm² sample surface area used.

备注: 报告编号中“E”表示此报告为中英文对照版本。

Remark: The end sign of report number E represents the bilingual version.

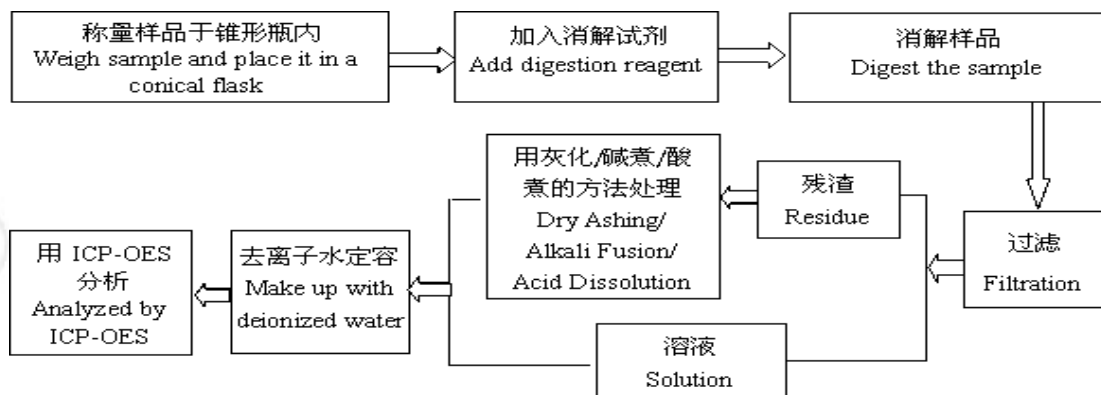
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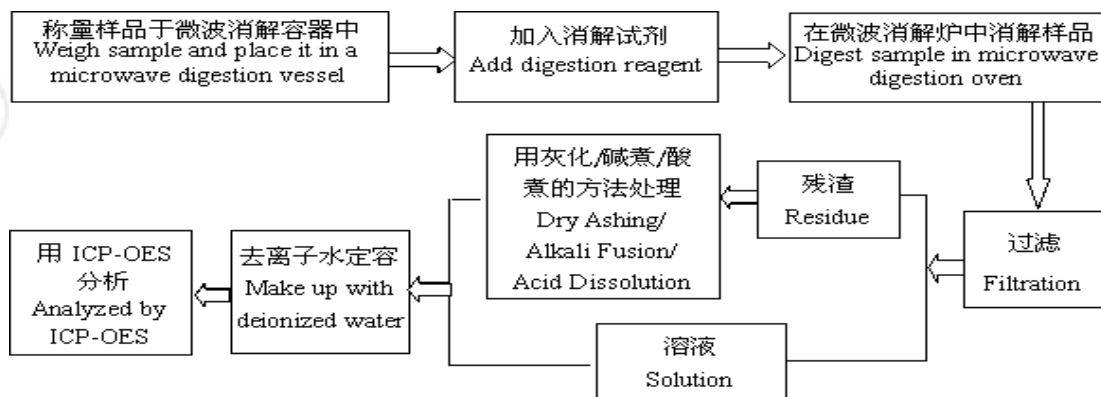
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检测流程 Test Process

1. 铅(Pb), 镉(Cd)
Lead(Pb), Cadmium(Cd)



2. 汞(Hg)
Mercury(Hg)

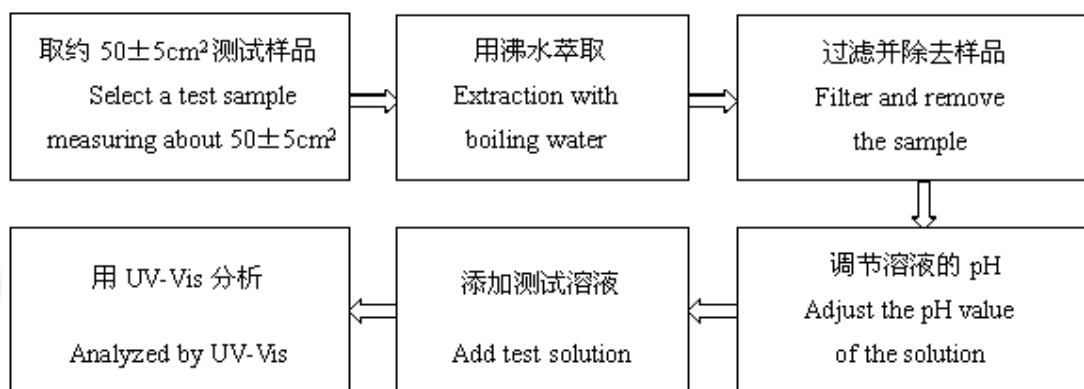


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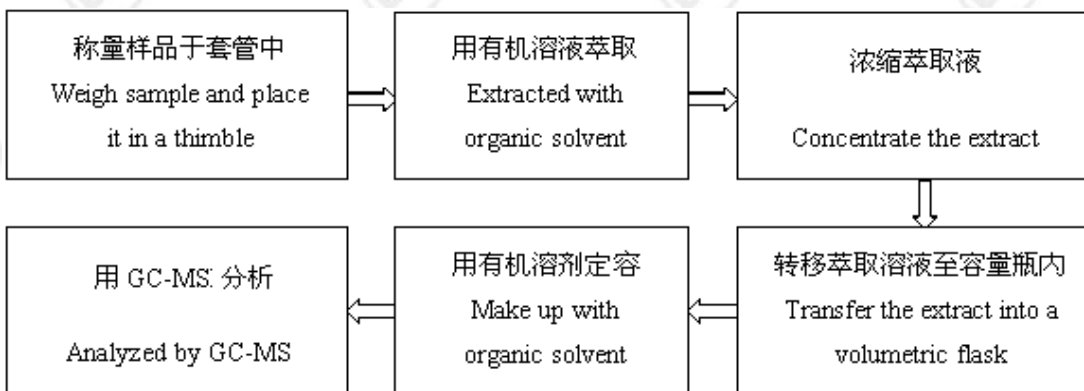
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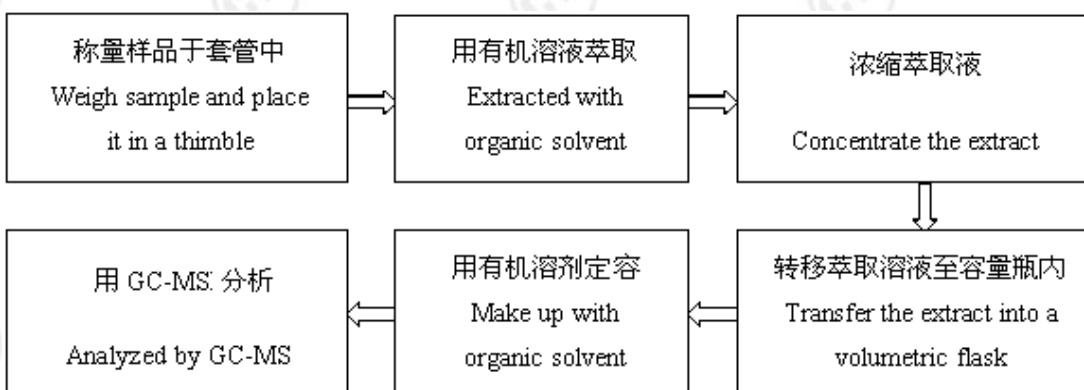
3. 六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))



4. 邻苯二甲酸酯 Phthalates



5. 多溴联苯(PBBs), 多溴二苯醚(PBDEs) Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)

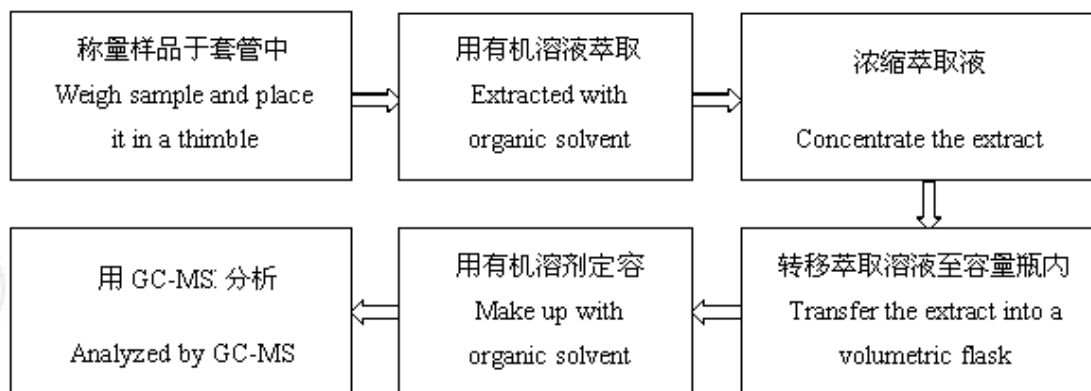


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6. 六溴环十二烷 (HBCDD)
Hexabromocyclododecane (HBCDD)



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样品图片 Photo(s) of the sample(s)



报告结束
*** End of report ***

检测报告无批准人签字及“报告专用章”无效，本报告检测结果仅对受测样品负责。未经CTI书面同意，不得部分复制本报告。

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

检测报告 Test Report

报告编号 RHS05F011891003E
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申请单位 苏州市华诺线缆科技有限公司
Applicant SUZHOU HUANUO CABLE TECHNOLOGY CO., LTD
地 址 苏州市相城区太平镇太平大街
Address TAIPING STREET TAIPING TOWN XIANGCHENG, SUZHOU

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 电线电缆料
Sample Name Wire and cable materials
样品型号 镀锡铜丝
Part No. Tinned copper wire
样品接收日期 2013.08.22
Sample Received Date Aug. 22, 2013
样品检测日期 2013.08.22-2013.08.26
Testing Period Aug. 22, 2013 to Aug. 26, 2013
检测要求 根据客户要求, 对所提交样品中的六溴环十二烷(HBCDD), 铅(Pb), 镉(Cd), 汞(Hg), 六价铬(Cr(VI)), 多溴联苯(PBBs), 多溴二苯醚(PBDEs), 邻苯二甲酸酯进行测试。

Test Requested As specified by client, to test Hexabromocyclododecane (HBCDD), Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates 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 Chen Lijuan
批 准
Approved by Su Hongwei

Su Hongwei
Senior Laboratory Manager



审 核
Reviewed by Zhong Rijun
日 期
Date 2013.08.26

No. 1102121596

深圳市华测检测技术股份有限公司上海分公司
Centre Testing International Corporation Shanghai Branch
上海市浦东新区新金桥路1996号
No.1996, New Jinqiao Road, Pudong District, Shanghai, China

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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(Pb) Lead(Pb)	IEC 62321:2008 Ed.1 Sec.9	ICP-OES
镉(Cd) Cadmium(Cd)	IEC 62321:2008 Ed.1 Sec.9	ICP-OES
汞(Hg) Mercury(Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex B	UV-Vis
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
多溴二苯醚(PBDEs) Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
六溴环十二烷(HBCDD) Hexabromocyclododecane (HBCDD)	参考US EPA 3550C: 2007 Refer to US EPA 3550C:2007	GC-MS
邻苯二甲酸酯 Phthalates	参考EN 14372: 2004(E) Refer to EN 14372:2004(E)	GC-MS

检测结果 Test Result(s)

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
铅(Pb) Lead(Pb)	N.D.	2 mg/kg
镉(Cd) Cadmium (Cd)	N.D.	2 mg/kg
汞(Hg) Mercury(Hg)	N.D.	2 mg/kg
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	阴性 Negative	/
测试项目 Test Item(s)	结果 Result	方法检测限 MDL
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg

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九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

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

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
六溴环十二烷(HBCDD) Hexabromocyclododecane (HBCDD)	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检测限 MDL
邻苯二甲酸酯 Phthalates		
邻苯二甲酸二正丁酯(DBP) Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄酯(BBP) Benzylbutyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基己基)酯(DEHP) Bis(2-ethyl(hexyl)) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg

测试样品/部位描述
Tested Sample/Part Description

银色金属丝
Silvery metal wire

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注释: 对于检测铅, 镉, 汞之样品已完全溶解。

-N.D. = 未检出 (小于方法检测限)

-mg/kg= ppm = 百万分之几

-阴性表示不含有六价铬, 即由表面积为50cm²的样品所萃取出来的溶液中的六价铬的浓度小于0.02mg/kg

Note: 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

-Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm² sample surface area used.

备注: 报告编号中“E”表示此报告为中英文对照版本。

Remark: The end sign of report number E represents the bilingual version.

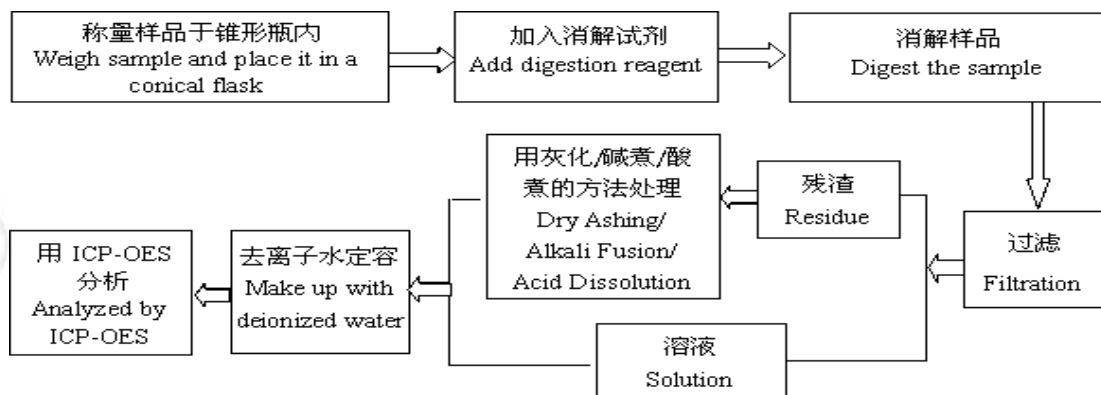
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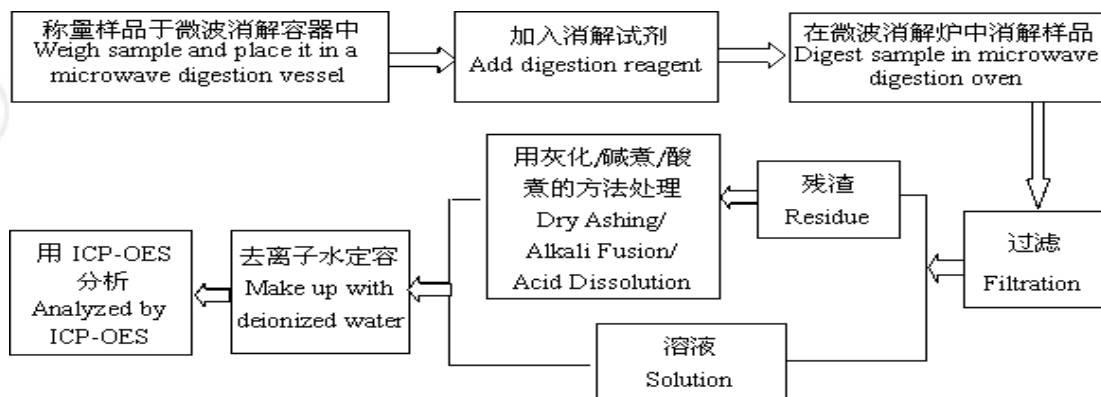
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检测流程 Test Process

1. 铅(Pb), 镉(Cd)
Lead(Pb), Cadmium(Cd)



2. 汞(Hg)
Mercury(Hg)

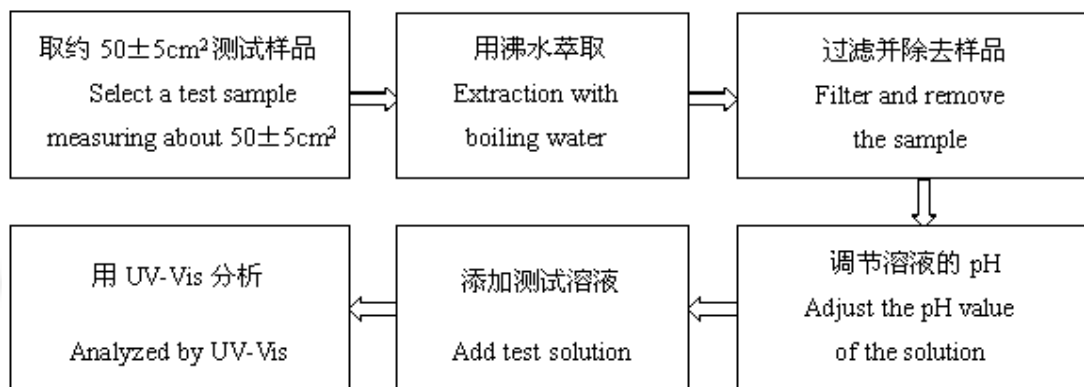


检测报告 Test Report

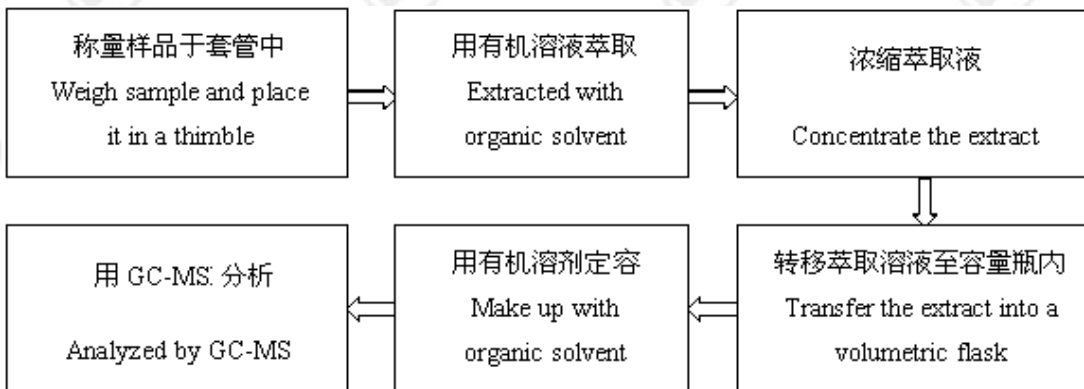
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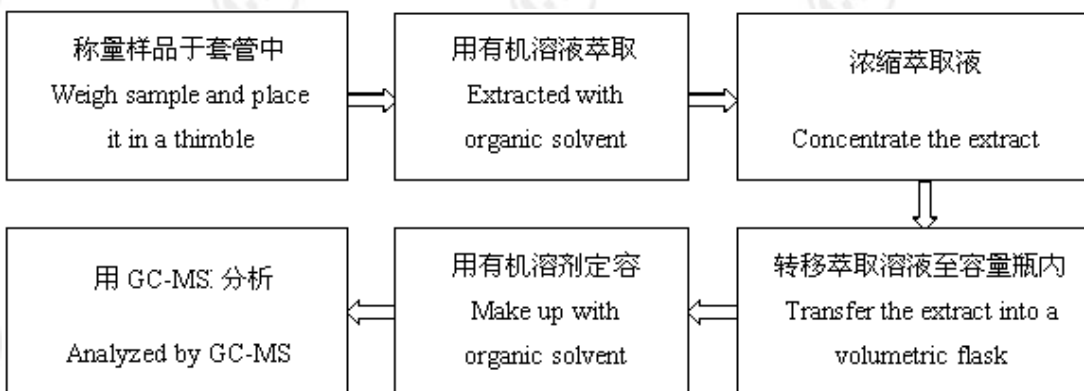
3. 六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))



4. 邻苯二甲酸酯 Phthalates



5. 多溴联苯(PBBs), 多溴二苯醚(PBDEs) Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)

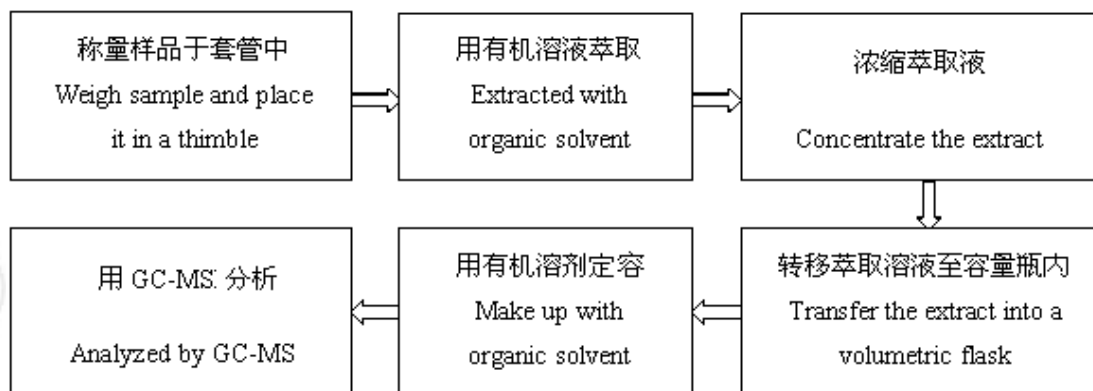


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6. 六溴环十二烷 (HBCDD)
Hexabromocyclododecane (HBCDD)



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样品图片 Photo(s) of the sample(s)



报告结束
*** End of report ***

检测报告无批准人签字及“报告专用章”无效，本报告检测结果仅对受测样品负责。未经CTI书面同意，不得部分复制本报告。

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