Specification For Approval

Date: 2013 / 12 / 13

File No.: 131213001

Version: 1.0

Customer： 研華股份有限公司

Customer P/N： 1750007265-01

INVAX P/N： NB1053-E

Description： Antenna

Cortec Checked By: R@D Dept 2013.12.13 Jack
Customer Approved By:

INVAX System Technology Corp.
4F. No. 815.Chung Hsiao East Rd.,Sec.5
Taipei, TAIWAN

TEL:886-2-2788-5218 FAX:886-2-2783-1658
http://www.invaxsystem.com

Cortec Technology Inc.
Xian-Xi Industrial, Sha-Tou Administration Zone,
Chang-A n Town, Dong-Guan City, Guangdong
Province, China
TEL:86-76 9-85388261 F AX:86-769-85317869
http://www.cortec.com.cn

Index:

1. Revision History / Page 3

2. Specification / Page 4

3. Characteristics and Reliability Test / Page 5

4. Antenna - S Parameter Test Data / Page 6 ~ 7

5. Antenna - Radiation Pattern Test Data / Page 8 ~ 9

6. Mechanical and Packing Drawing / Page 10 ~ 11

7. Material Description and RoHS Test Report / Page 12 ~ end

1. Revision History

Revision	Date	Change Notification	Description
1.0			

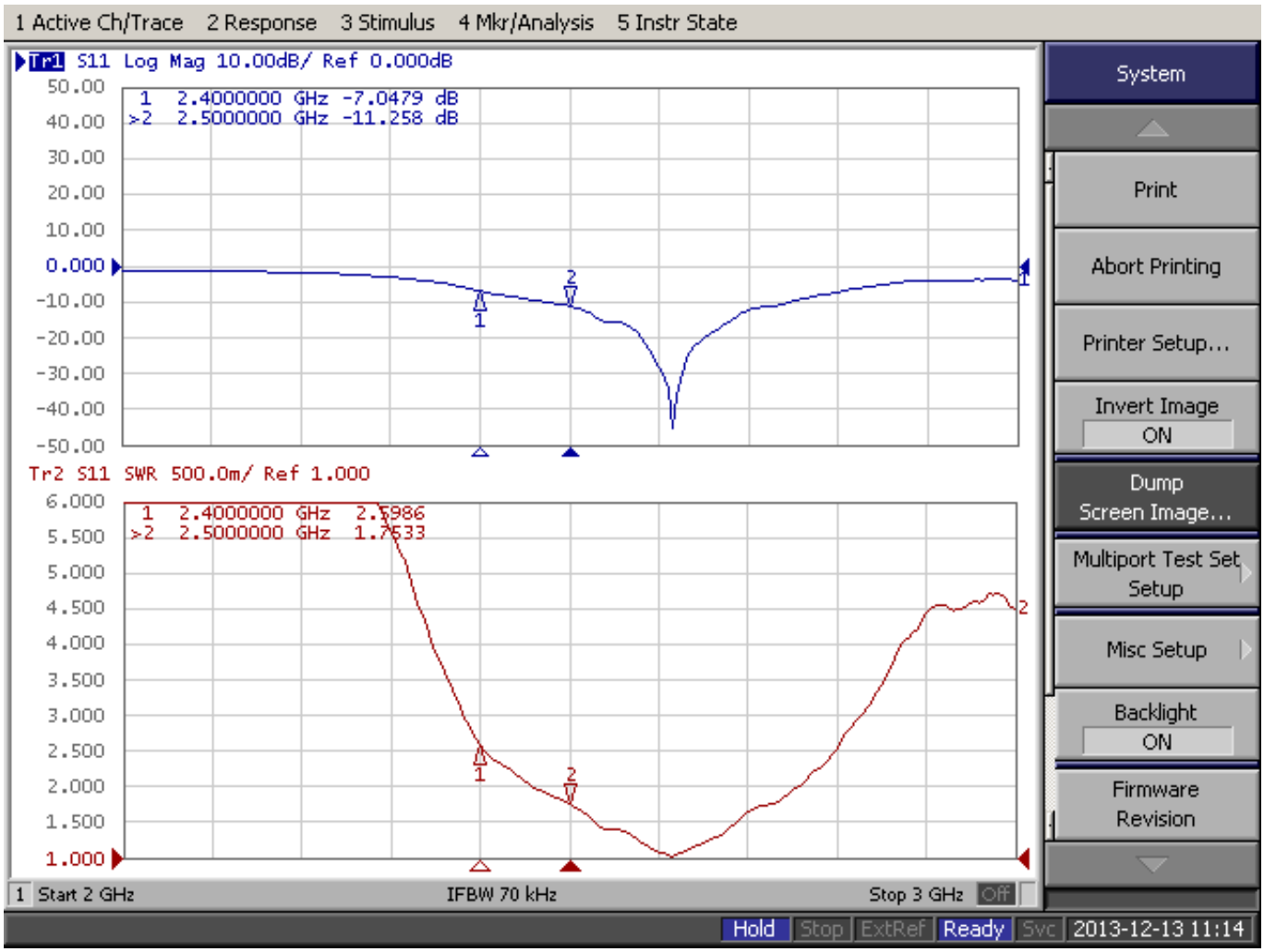
2. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	2400~2500 MHz
Return loss	≦-7 dB
Peak Gain	< 2.0 dBi
Efficiency	45 %
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	C7521
Cable Type	OD1.13mm
Connector Type	Mini Connector
Connector Pull Test	>= 1Kg
C. Environmental	
Operation Temperature	- 40 ˚C ~ + 65 ˚C
Storage Temperature	- 40 ˚C ~ + 80 ˚C

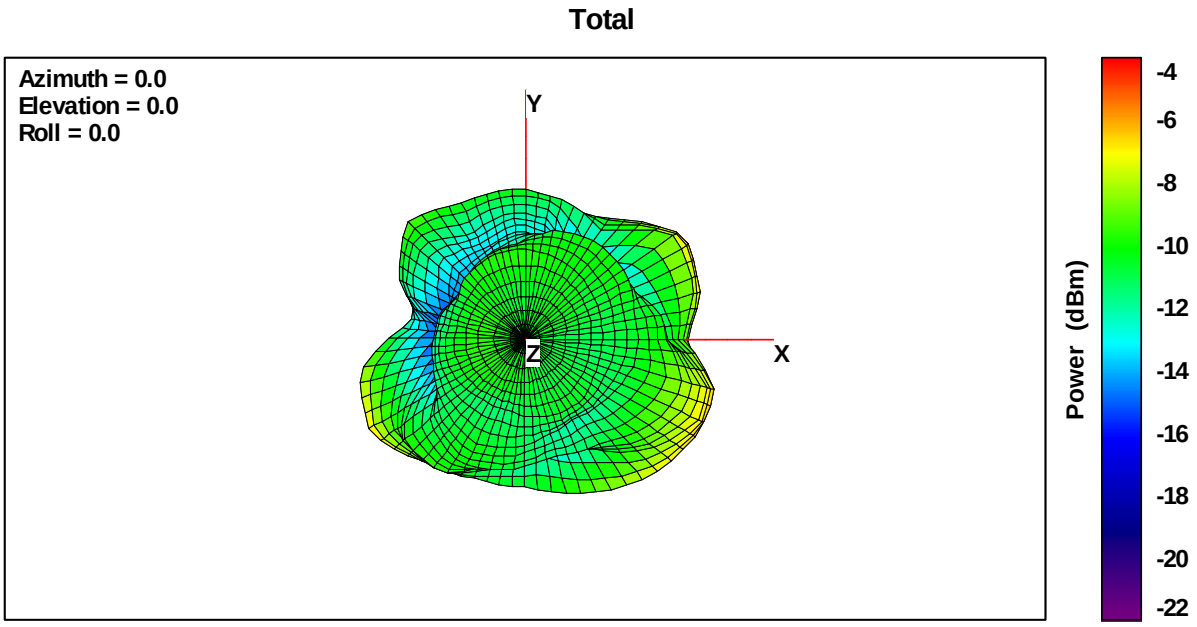
3. Characteristics and Reliability Test

Test Items		Test Condition and Procedure	Requirements
C1	S.W.R.	Set DUT on Network Analyzer; make individual calibration to test	Directive DUT specification
C2	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification
M1	Vibration	GB / T2423 . 48-1997 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz 3 directions; 2 hours for each direction	1. No Visual Damage 2. Frequency Tol.<= 5%
M2	Random Drop	GB / T2423.8-1995 Height: 1.0 Meter; 3 directions; 1 time for each direction	1. No parts separated 2. Frequency Tol.<= 5%
M3	Solderability	GB 2423 . 28- 82 Solder iron: 260±5°C; Duration: 5 seconds	1. Mounted on PCB 2. No Visual Damage
M4	Terminal-Pull Test	Holding with individual specification; force applied to axis of terminal	1. Directive DUT specification 2. Frequency Tol.<= 5%
M5	Terminal-Torque Test	Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal	1. Directive DUT specification 2. Frequency Tol.<= 5%
M6	Dimension	Inspection of dimension, color, material, package, surface process	Directive DUT specification
E1	Salt Spray	GB / T 2423 . 17- 93 Temp: 35°C; RH: >= 95%; NaCl solution: >= 5%; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E2	Humidity	GB / T 2423 . 4 - 93 Temp: 80°C / 12 H; -40°C / 12H RH: >= 90%; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E3	Thermal Shock	GB / T 2423 . 22 - 87 1 Cycle: - 40°C (30 minutes) to + 80°C (30 minutes) Cycles: 24	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E4	Life (High Temp.)	GB /T 2423 . 2 - 89 Temp: 80°C; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
R1	RoHS	With Reference to IEC 62321:2008 with flow chart	Directive RoHS 2011/65/EU
R2	PFOS	With Reference to USA EPA 3540C:1996 by LC/MS	Directive RoHS 2006/122/EC
R3	PFOA	With Reference to USA EPA 3540C:1996 by LC/MS	Directive RoHS 2006/122/EC

4. Antenna - S Parameter Test Data



5. Antenna - Radiation Pattern Test Data



Total	Point Values	Ant. Port Input Pwr. (dBm)	Tot. Rad. Pwr. (dBm)	Peak EIRP (dBm)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
	Frequency (MHz)							
	2400	0	-3.21068	1.38173	4.59241	-3.21068	47.7454	1.38173
	2410	0	-3.23591	1.43535	4.67126	-3.23591	47.4689	1.43535
	2420	0	-3.20826	1.44512	4.65338	-3.20826	47.7721	1.44512
	2430	0	-3.40216	1.28733	4.68949	-3.40216	45.6861	1.28733
	2440	0	-3.49955	1.17009	4.66964	-3.49955	44.673	1.17009
	2450	0	-3.39655	1.2854	4.68194	-3.39655	45.7452	1.2854
	2460	0	-3.30508	1.33222	4.6373	-3.30508	46.7188	1.33222
	2470	0	-3.22639	1.4437	4.67009	-3.22639	47.573	1.4437
	2480	0	-3.244	1.32785	4.57185	-3.244	47.3806	1.32785
	2490	0	-3.10579	1.44964	4.55542	-3.10579	48.9127	1.44964
	2500	0	-3.12333	1.48019	4.60352	-3.12333	48.7155	1.48019

6. Mechanical Drawing

See attached files

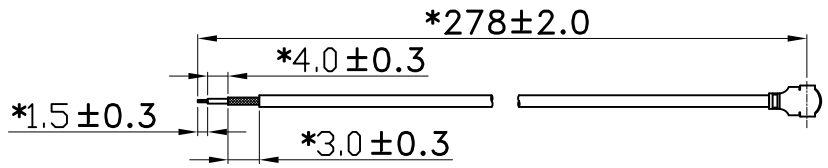
7. Material Description and RoHS Test Report

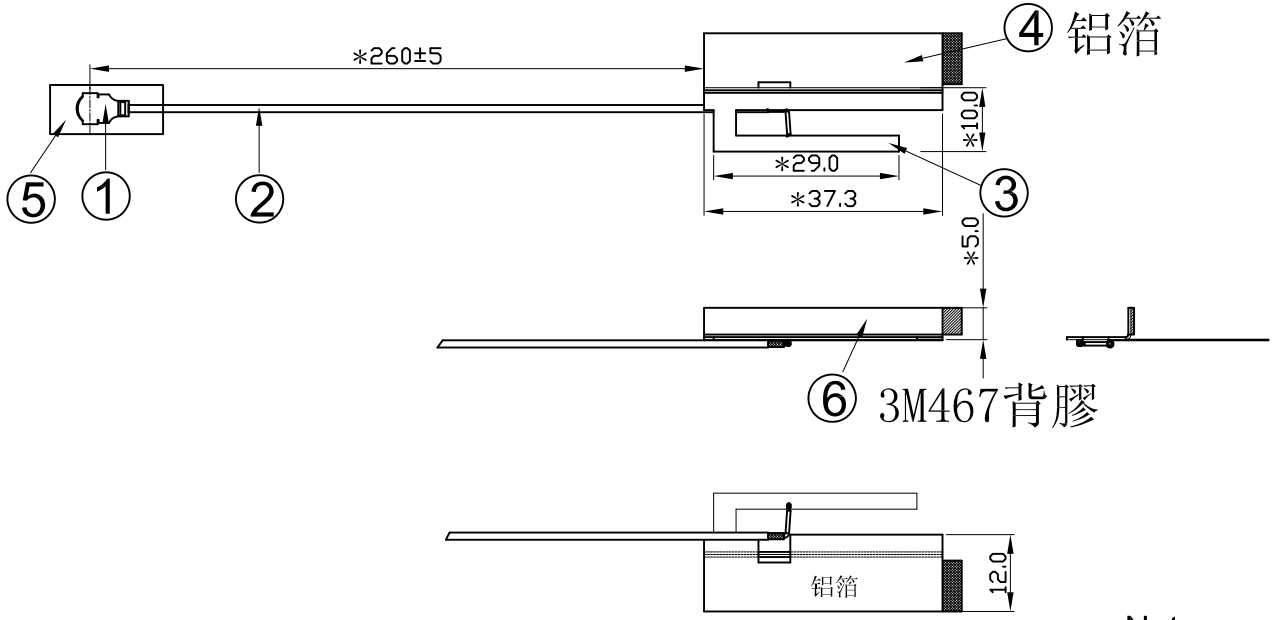
See attached files

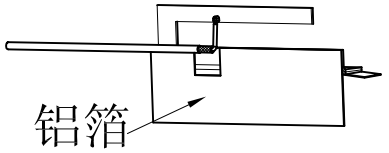
RoHS Compatible

★★★★☆

SIGN	DATE	DESCRIPTION	APPROVER
A			
A			
A			







Note:

1. Take" ＊ "is the important dimension.
2. Tolerance:Unmarked tolerance refer to the standard tolerance please.
3. Pull Strength of the connector must be ≧1.0kg.

No.	Part Number	Name	Material	Finish	Q'ty
6	GS-NB1053-01A	Adhesive	3M467	4.2mm*37mm *0.15mm	1
5	R-HSTUBE-028T	Sheath	EVA	ø3.0mm*15mm	1
4	Foil-AL-NB1053-02A	Al FOIL	Al	12*37mm	1
3	SM-NB1053E-01C	Shell	C7521	37.3mm*5mm *0.4mm	1
2	R-CB-113B	Coaxial Cable	OD1.13	Black	1
1	CR-113	Connector	Cu	Mini Connector	1

Invax System Group.
Cortec
Cortec Technology Inc.
Http://www.invaxsystem.com Tel :886-2-27885218
E-mail:info@invax.com.tw Fax:886-2-27831658

TITLE: Embedded Antenna

PART NO.: NB1053-E | CUSTOMER P/N: /

APP BY	CHK BY	RF BY	DES BY		Tolerance
Grant 13/11/27	Jack 13/11/27	SiFei 13/11/27	LJHUA 13/11/27	UNITS: mm SCALE: / REVISION: A	X.X ±0.2 X.XX ±0.1 X° ±1


TR1
TR2

Invax System Group.

Cortec

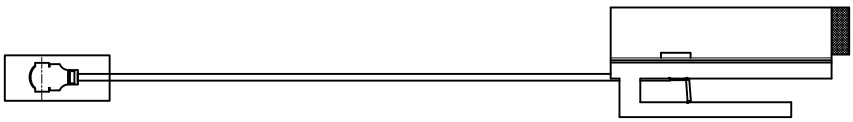
產品包裝規範
PACKING CRITERION

★★★★☆

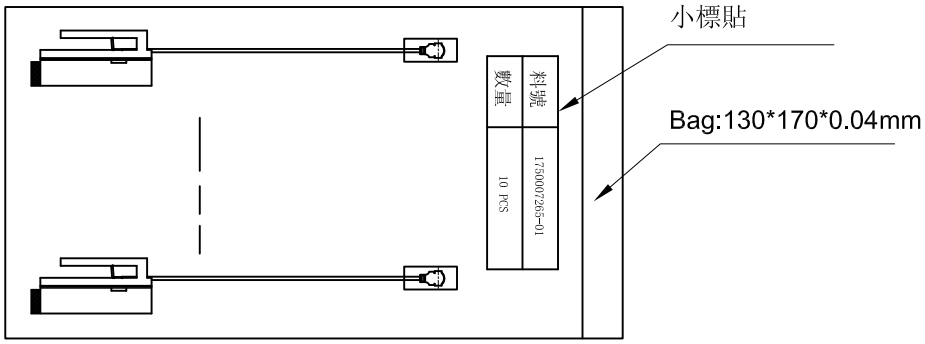
Date: 2013/11/27

Part Number : NB1053-E	Revision : A
Name: Embedded Antenna	Customer :

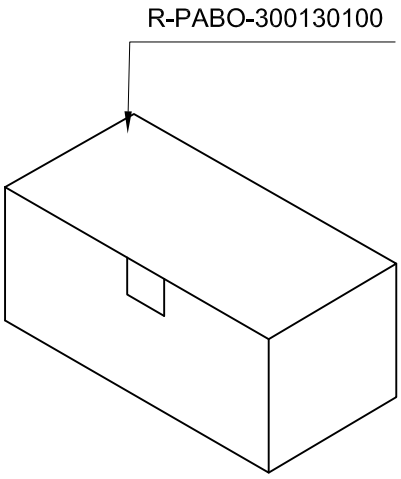
1. The Product



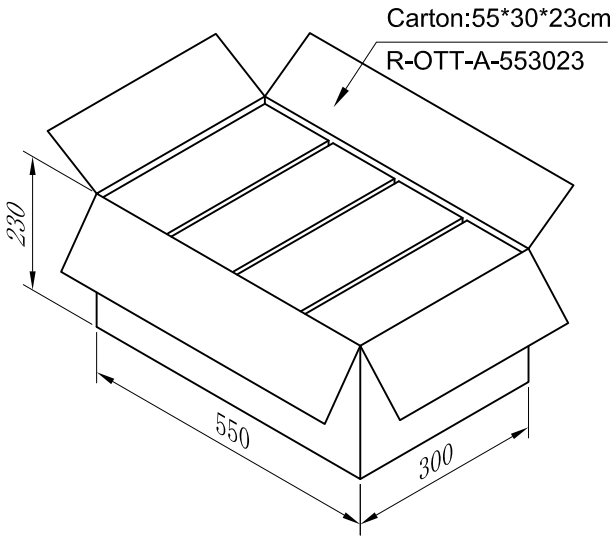
2. 10 PCS/per Bag



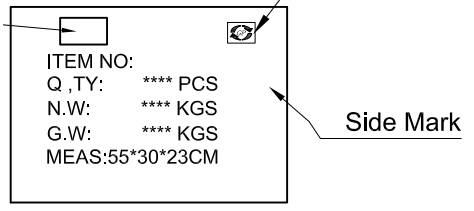
3. 250 PCS/per Box

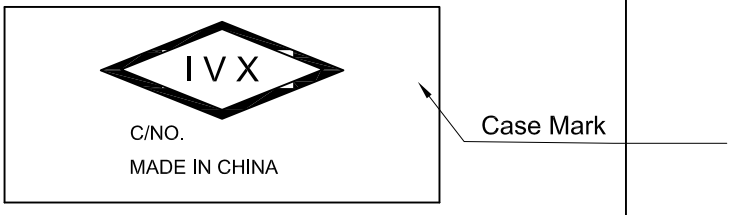


4. 2000 PCS/per Carton



Carton Label:





APPROVED BY：Grant　CHECKED BY：Jack　DESIGNED BY：Ijhua

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)

康捷電子有限公司	
填表：	時麗
部門：	研發部
職務：	文員

物料中HSF對象物質含量調查表

物料名稱：NB1053 -E

序號	物料型號	物料各構成名稱	各構成物料的材質	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	SM-NB1053E-01C	Shell	C7521	N.D.	12	N.D.	Negative			CANEC1302378808	2013.03.05	C7521 white copper	SGS
2	Foil-AL-NB1053-02A	Al foil	Al	N.D.	15	N.D.	N.D.	N.D.	N.D.	CANEC1302401401	2013.03.06	Aluminum foil	SGS
3	R-HSTUBE-028T	Sheath	EVA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC1302065601	2013.02.27	HEAT SHRINKABLE	SGS
4	GS-NB1053-01A	Asheslve	3M	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	SHAEC1308224601	2013.05.13	3M 9471 LE	SGS
5	R-CB-113B	Coaxial Cable	黑色色母	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	SHAEC1304390301	2013.03.26	FEP Colormasterbatch	SGS
6			FEP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	RHS05F011891001E	2013.08.26	电线电缆料	CTI
7			鍍錫銅	N.D.	N.D.	N.D.	Negative	N.D.	N.D.	RHS05F011891003E	2013.08.26	电线电缆料	CTI
8			鍍銀銅	N.D.	N.D.	N.D.	Negative	N.D.	N.D.	RHS05F011891004E	2013.08.26	电线电缆料	CTI
9	CR-113	Mini Connector	PBT黑色	N.D	6.47	N.D	N.D	N.D	N.D	KA201370363	2013.07.15	PBT	SGS
10			銅	N.D	N.D	N.D	Negative			JP/2012/110811	2012.12.05	C5210R	SGS
11			鍍金層	N.D	N.D	N.D	Negative			RLSHF001373050001	2013.02.25	镀金层Gold coating	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，鎘的允許濃度爲5ppm

歐盟ROHS指令豁免條款2009/95/BC、钢中合金元素中的铅含量达0.35%、铝含量达0.4%、铜合金中的铅含量达4%

No.090206-1
Fed/06/09

材料證明書

MATERIAL CERTIFICATE

我们在此证明我司产品所使用的材质。
WE HEREBY CERTIFY THAT THE FOLLOWING MATERIALS ARE USED IN OUR PRODUCT.

产品名：RF 连接器 插头
PRODUCT NAME :RF Connector Plug

料号/Part No.	项目/Contents	塑胶/Housing	端子/Contact	外壳/Ground Contact
7000AA-000-1R0 7000AB-000-1R0 7000AC-000-1R0 7000AD-000-1R0 7001A2-000-1R0	材质名/Material 型号/Cat No. 制 造 商 /Manufacturer	PBT F202G30 新光/ SHINKONG SYNTHETIC FIBERS CORPORATION	Phosphor bronze C5210-H 三菱/ MITSUBISHI ELECTRIC METECS CO,.LTD	Phosphor bronze C5210-H 三菱/ MITSUBISHI ELECTRIC METECS CO,.LTD
	UL 耐燃性/flame class	V-0	----------	----------
	UL file No.	E107536	----------	----------

*附件资料：UL 卡副本/UL CARD COPY

核准 APPROVAL	审核 CHECK	经办 ORIGINATOR
Gaohui 2009.02.06		ZDX 2009.02.06

Component - Plastics

E107536

SHINKONG SYNTHETIC FIBERS CORP

223 YEN PING RD SEC 3, PIN CHENG TAOYUAN HSIEN 324 TW

F202G30

Polybutylene Terephthalate (PBT), furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	0.8	V-0	0	0	75	75	75
	1.5	V-0	0	0	75	75	75
	3.2	V-0	0	0	75	75	75

Comparative Tracking Index (CTI): 0

High-Voltage Arc Tracking Rate (HVTR): 0

Dielectric Strength (kV/mm): 22

Dimensional Stability (%): -

High Volt, Low Current Arc Resis (D495): 5

Volume Resistivity (10^x ohm-cm): 15

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date: 1987-07-13
Last Revised: 2009-06-09

Underwriters Laboratories Inc®

IEC and ISO Test Methods

Test Name	Test Method	Units	Thickness Tested (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.8	V-0 (ALL)
			1.5	V-0 (ALL)
			3.2	V-0 (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	0.8	875
			1.5	875
			3.2	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	0.8	775
			1.5	775
			3.2	775
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	C	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m^2	-	-
ISO Izod Impact	ISO 180	kJ/m^2	-	-
ISO Charpy Impact	ISO 179-2	kJ/m^2	-	-

Underwriters Laboratories Inc®

the standard in safety

Underwriters Laboratories

File E318898 Vol 1 Issued: 2008-06-26
Revised:

FOLLOW-UP SERVICE PROCEDURE
(TYPE L)

COMPONENT - APPLIANCE WIRING MATERIAL
(AVLV2,AVLV8)

Manufacturer: (100237-430)
JIANGYIN SHENYU COMMUNICATION
NO 1-1 OF CHENGJIANG
XINYUAN RD
JIANGYIN,
JIANGSU 214400 CHINA

Applicant: (100237-430)
SAME AS MANUFACTURER

Recognized Company: (100237-430)
SAME AS MANUFACTURER

This Procedure authorizes the above manufacturer to use the marking specified by Underwriters Laboratories Inc.(UL), or any authorized licensee of UL, only on products covered by this Procedure, in accordance with the applicable UL Services Agreement.

The prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and representatives of Underwriters Laboratories Inc. and is not to be used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. (UL) or any authorized licensee of UL, upon request.

This PROCEDURE, and any subsequent revision, is the property of Underwriters Laboratories Inc.(UL) and the authorized licensee of UL and is not transferable.

Underwriters Laboratories Inc.

Stephen Hewson
Senior Vice President
Global Follow-Up Service Operations

William R. Carney
Director
North American Certification Program

ONLINE CERTIFICATIONS DIRECTORY

AVLV2.E318898
Appliance Wiring Material - Component

Page Bottom

Appliance Wiring Material - Component

See General Information for Appliance Wiring Material - Component

SHENYU COMMUNICATION TECHNOLOGY INC E318898
275 E WAIHUAN RD
JIANGYIN, JIANGSU 214400 CHINA

1.13型號

Table of Recognized Styles							
Single-conductor, thermoplastic insulation.							
1226	1333	1591	1723	1857	1886	10064	10518
1227	1354	1592	1726	1858	1887	10072	11149
1330	1371	1708	1727	1859	1901	10111	
1331	1538	1709	1766	1860	1927	10248	
1332	1577	1710	1847	1882	10011	10362	

Marking: Company name, voltage rating, temperature rating, conductor size, conductor material if other than copper, and use.
Last Updated on 2010-11-09

Questions? Print this page Notice of Disclaimer Page Top

Test Report

DONGGUAN CITY JINFENG METAL MATERIAL CO.,LTD

509 ZHEN'AN ZHONG ROAD,CHANG'AN TOWN,DONGGUAN CITY
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : C7521 white copper(in chinese as C7521 白铜)

SGS Job No. :	CP13-007106 - GZ
Date of Sample Received :	28 Feb 2013
Testing Period :	28 Feb 2013 - 05 Mar 2013
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.

Trophy Zhang
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
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 Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	CAN13-023788.010	Silvery metal 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 : With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.

Test Item(s)	Limit	Unit	MDL	*010*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	12
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.

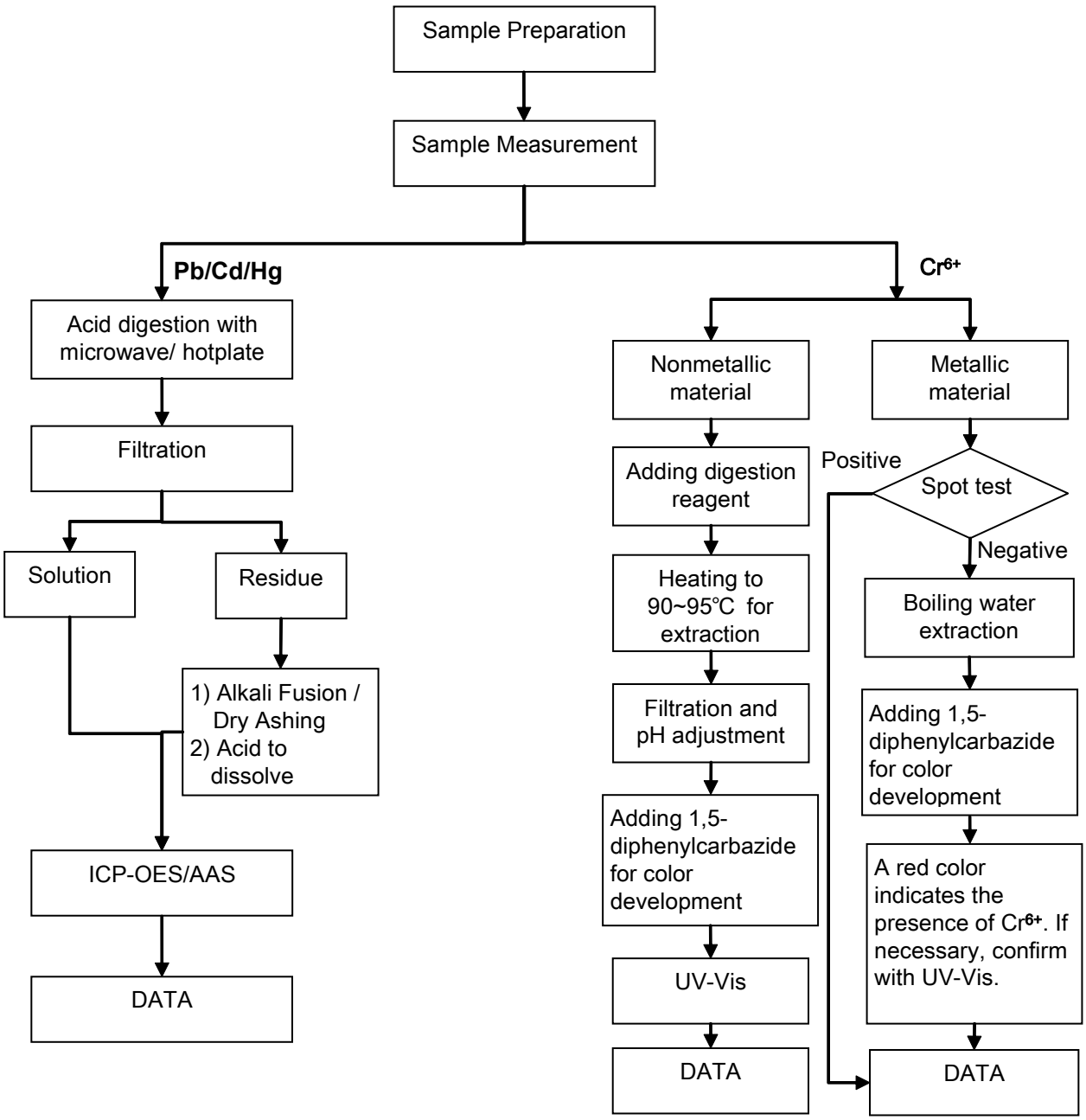
Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
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
Member of the SGS Group (SGS SA)

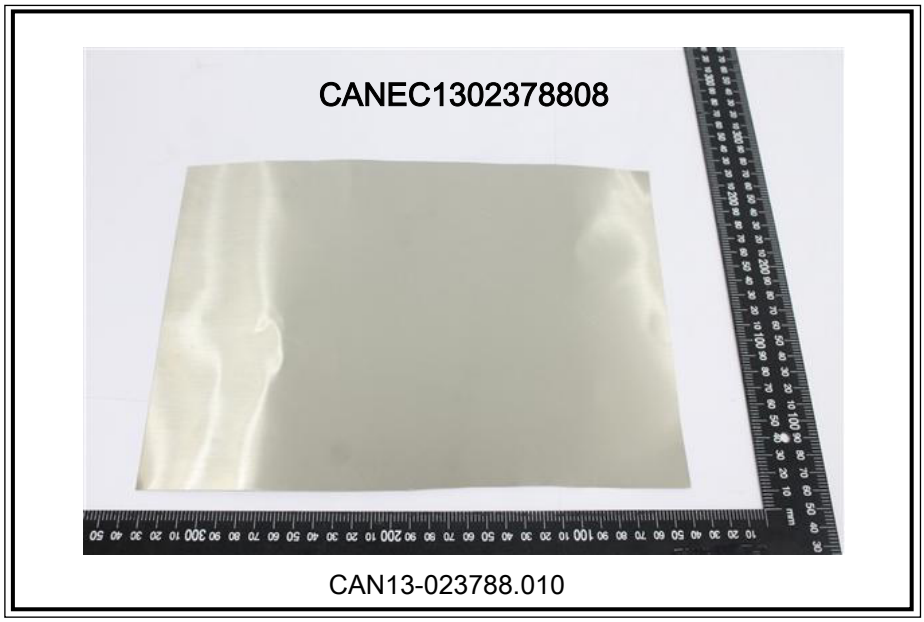
ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Michael Tso
2) Name of the person in charge of testing: Adams Yu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr6+ test method excluded).



Sample photo:



CAN13-023788.010

SGS authenticate the photo on original report only

*** End of Report ***

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
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

DONGGUAN QINGXI JUZHUAN STICKINESS PRODUCTS FACTORY

THE INDUSTRIAL AREAS OF JIN QIAO TU QIAO COUNTRYSIDE QING XI TOWN,DONGGUAN CITY,GUANGDONG PROVINCE
CHINA

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

SGS Job No. :	CP13-007460 - GZ
Date of Sample Received :	28 Feb 2013
Testing Period :	28 Feb 2013 - 06 Mar 2013
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).

Signed for and on behalf of
SGS-CSTC Ltd.

Trophy Zhang
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Testing Service Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
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
Member of the SGS Group (SGS SA)

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	CAN13-024014.001	Silvery metal foil

Remarks :

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

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

Elementary Analysis & Flame Retardants

Test Method : With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs by GC-MS.

Test Item(s)	Unit	MDL	*001*
Cadmium (Cd)	mg/kg	2	ND
Lead (Pb)	mg/kg	2	15
Mercury (Hg)	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	◇	Negative
Sum of PBBs	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	mg/kg	-	ND
Monobromodiphenyl ether	mg/kg	5	ND

Test Item(s)	Unit	MDL	*001*
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)◇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.

Halogen

Test Method : With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

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

Hexabromocyclododecane (HBCDD)

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

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

Notes :

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

Phthalate

Test Method : Determination of phthalates by GC-MS based on EN 14372:2004.

Test Item(s)	Unit	MDL	*001*
Dibutyl Phthalate (DBP)	% (w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	% (w/w)	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	% (w/w)	0.003	ND

Notes :

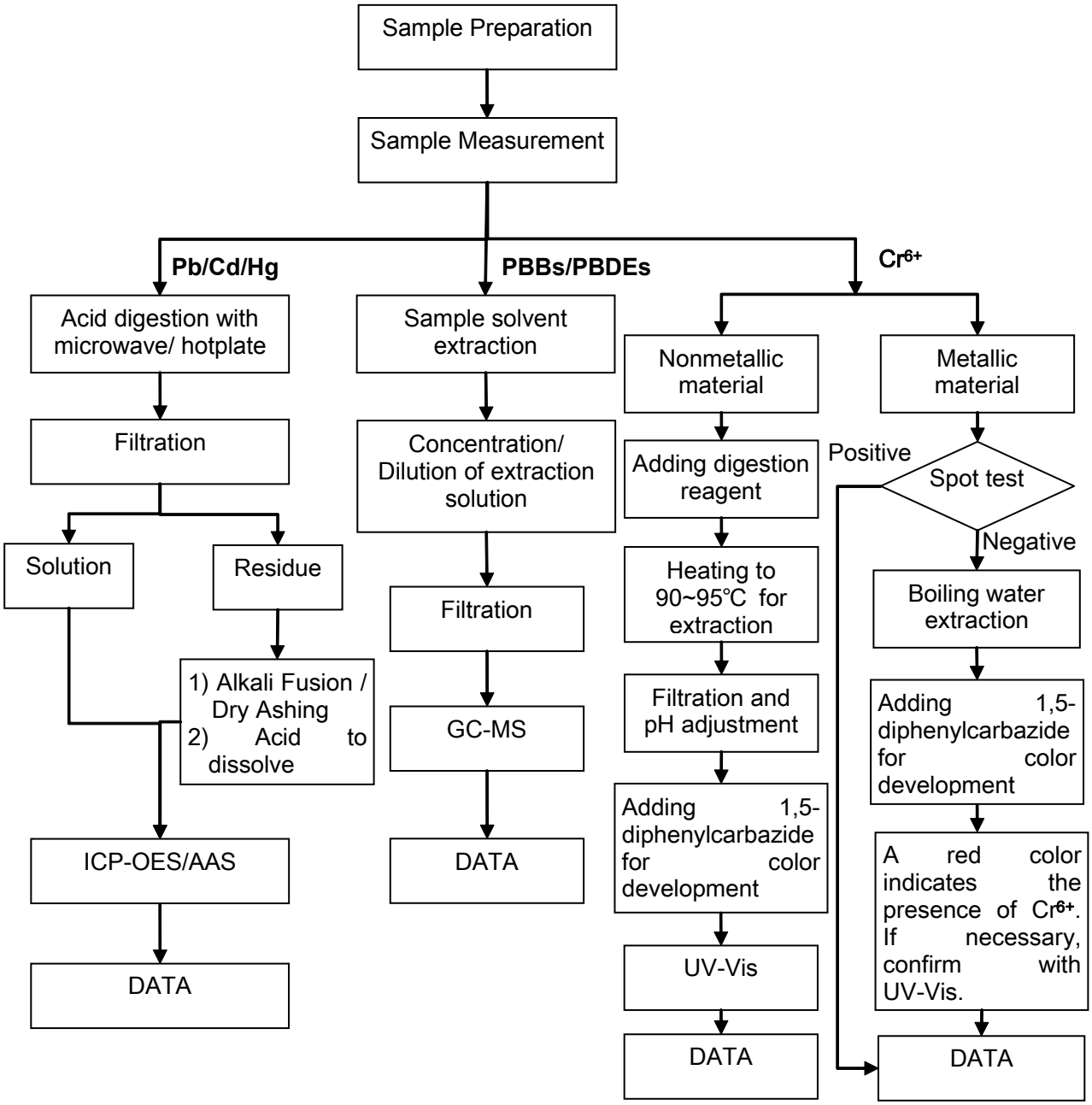
(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP) and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Customs Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
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
Member of the SGS Group (SGS SA)

ATTACHMENTS

RoHS Testing Flow Chart

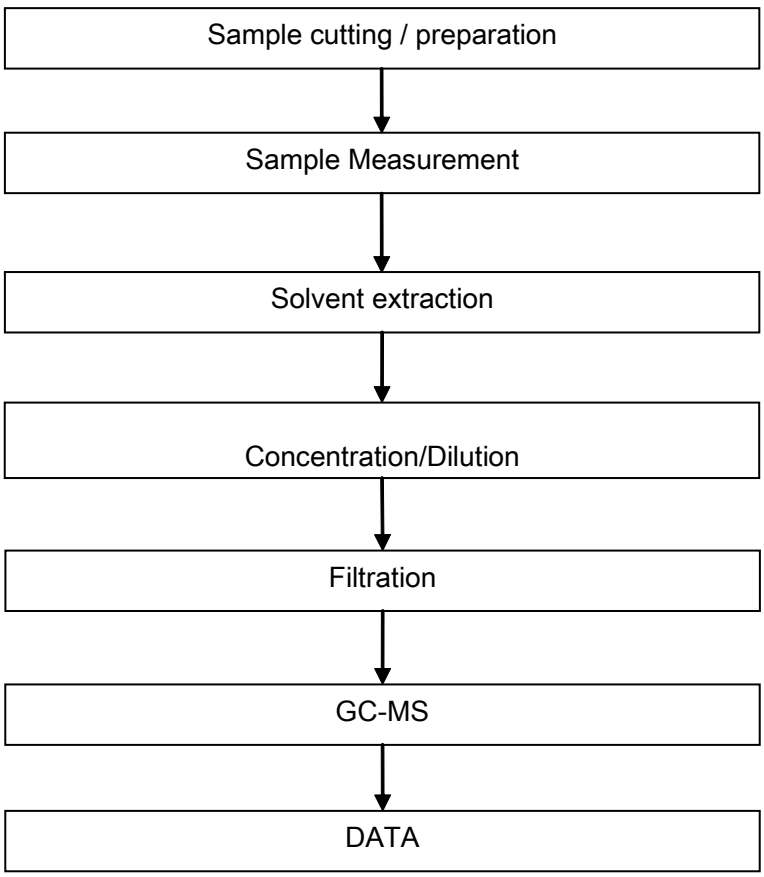
1) Name of the person who made testing: Michael Tso / Cutey Yu
2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr^{6+} and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart

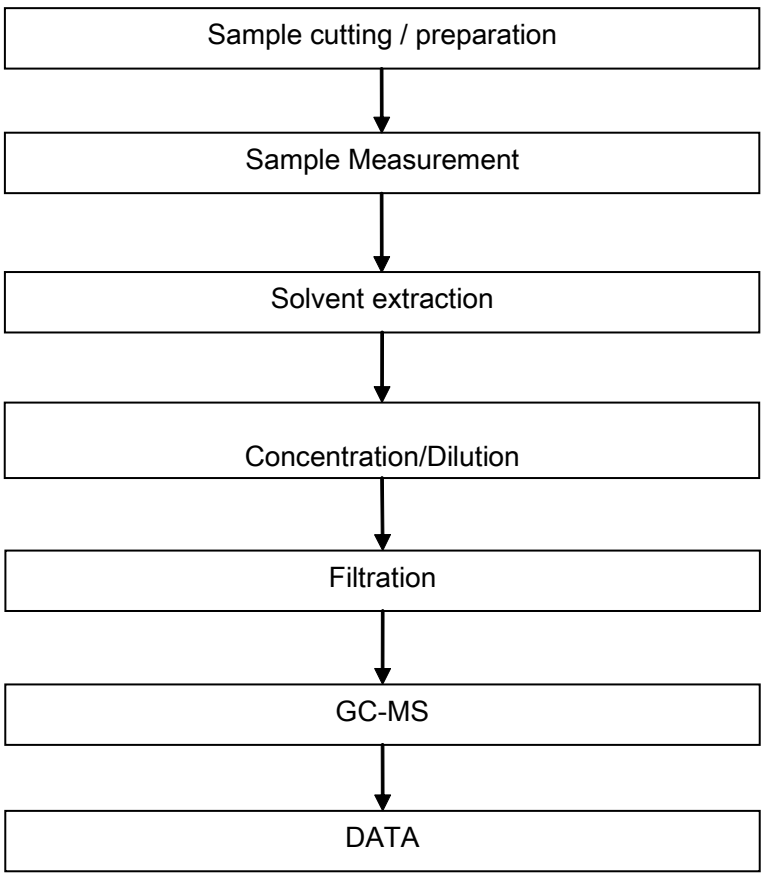
1) Name of the person who made testing: Liu Qiong
2) Name of the person in charge of testing: Yolanda Wei



ATTACHMENTS

HBCDD Testing Flow Chart

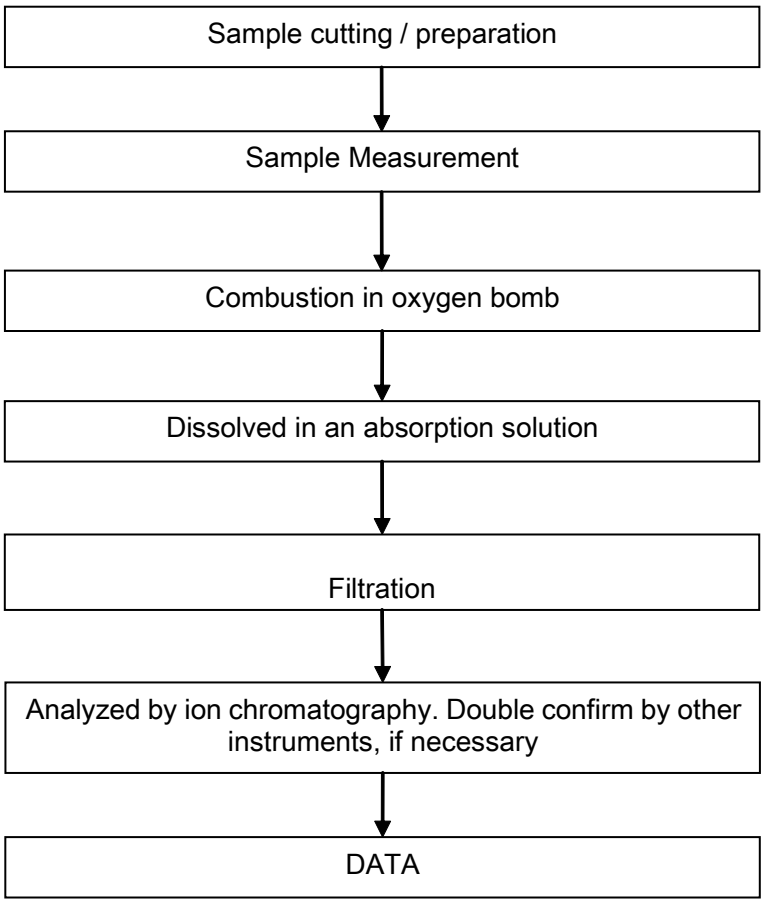
1) Name of the person who made testing: Cutey Yu
2) Name of the person in charge of testing: Yolanda Wei



ATTACHMENTS

Halogen Testing Flow Chart

1) Name of the person who made testing: Bella Wang
2) Name of the person in charge of testing: Adams Yu



SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
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

Sample photo:

CAN13-024014.001

SGS authenticate the photo on original report only

*** End of Report ***

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Service Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
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

DONGGUAN SALIPT CO.,LTD.

SALIPT SCIENCE PARK,JINGXIANG INDUSTRY DIST.,LIAOBU,DONGGUAN CITY,GUANGDONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : HEAT SHRINKABLE TUBING(Clear)

SGS Job No. :	CP13-005919 - SZ
Tested Sample Info. :	S-902-600
Client Ref. Info. :	S-902-300
Manufacturer :	SALIPT
Date of Sample Received :	21 Feb 2013
Testing Period :	21 Feb 2013 - 27 Feb 2013
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.

Trophy Zhang
Approved Signatory

东莞市盛琳电子有限公司 质量部

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	CAN13-020656.001	Transparent tube

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 : With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs content by 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	2	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

Test Item(s)	Limit	Unit	MDL	*001*
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.

Hexabromocyclododecane (HBCDD)

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

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

Notes :

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

Phthalate

Test Method : Determination of phthalates by GC-MS based on EN 14372:2004.

Test Item(s)	Unit	MDL	*001*
Dibutyl Phthalate (DBP)	% (w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	% (w/w)	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	% (w/w)	0.003	ND

Notes :

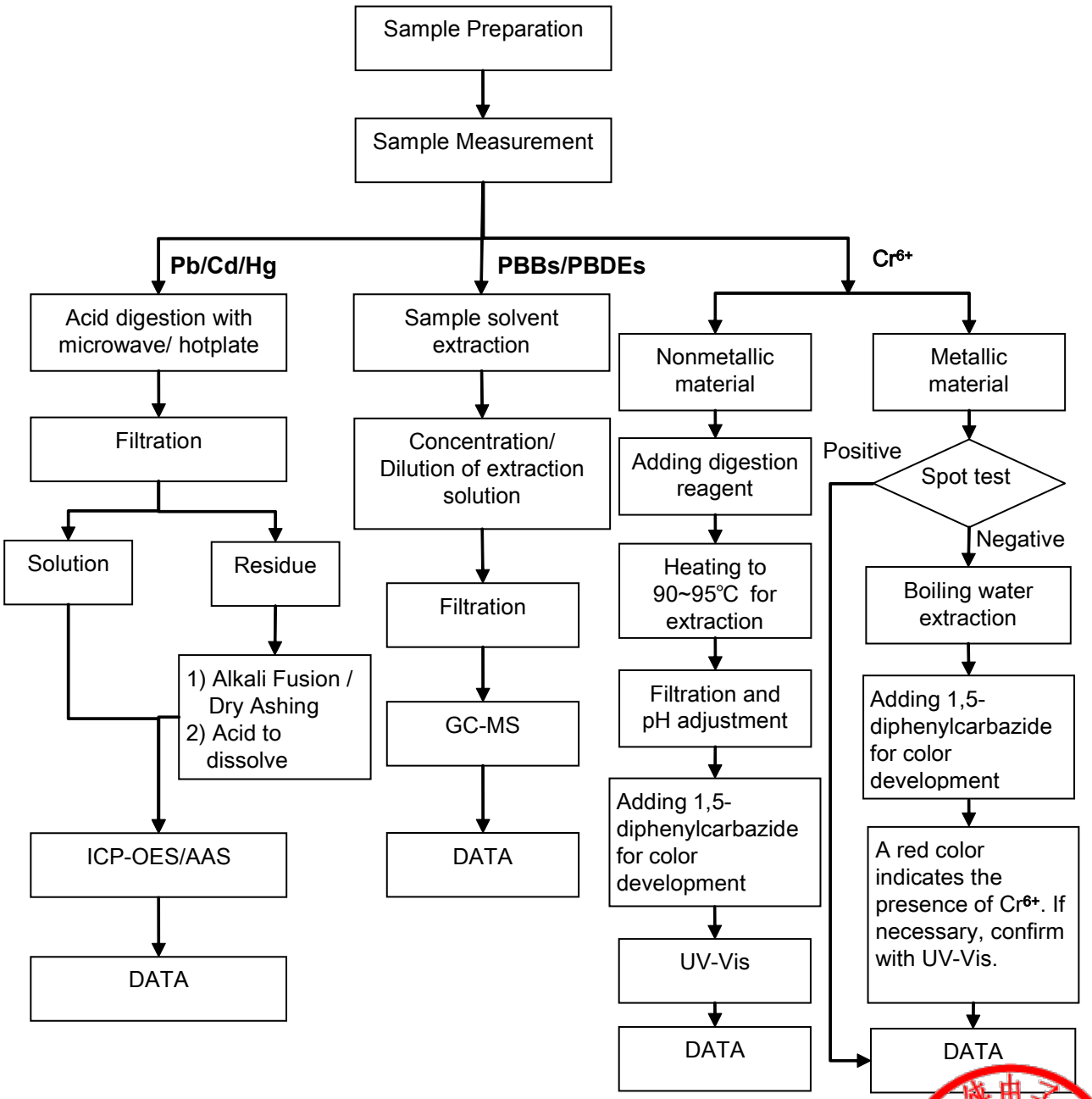
(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP) and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Customs Technical Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
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

ATTACHMENTS

RoHS Testing Flow Chart

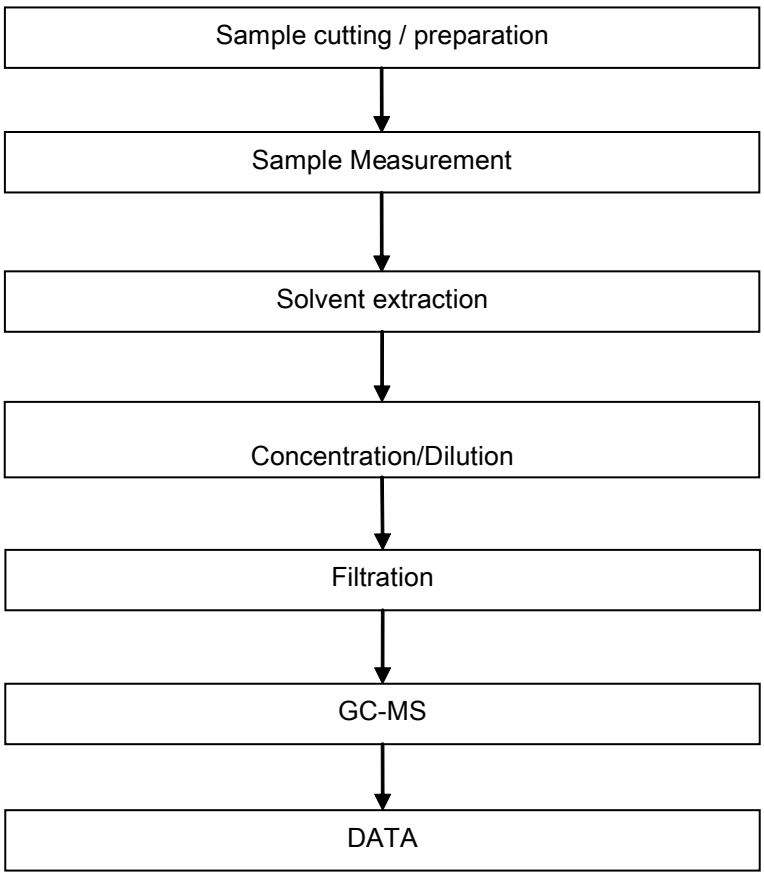
1) Name of the person who made testing: Michael Tso / Cutey Yu
2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr^{6+} and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart

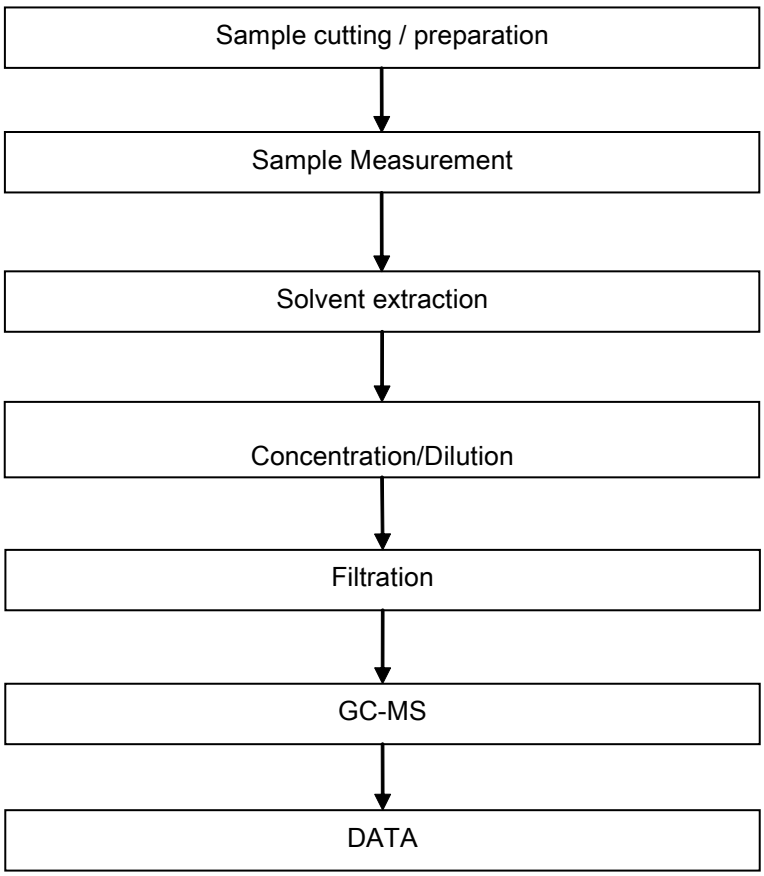
1) Name of the person who made testing: Liu Qiong
2) Name of the person in charge of testing: Yolanda Wei



ATTACHMENTS

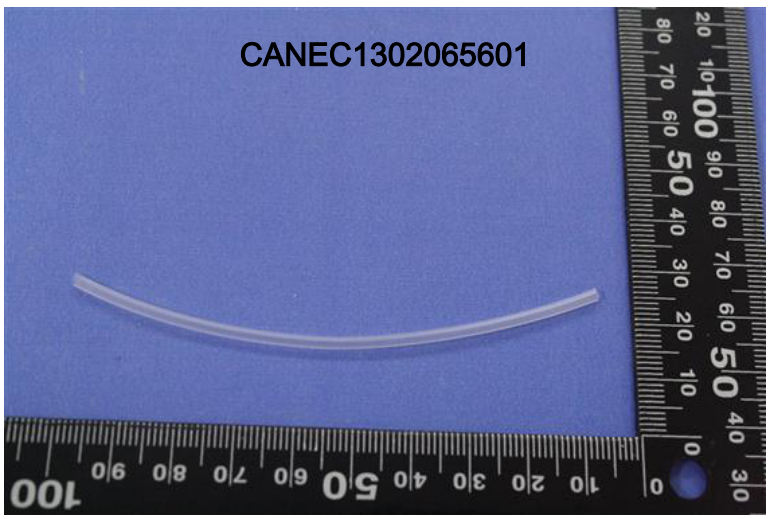
HBCDD Testing Flow Chart

1) Name of the person who made testing: Cutey Yu
2) Name of the person in charge of testing: Yolanda Wei



SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
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
Member of the SGS Group (SGS SA)

Sample photo:



CAN13-020656.001

SGS authenticate the photo on original report only

*** End of Report ***

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Service Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
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. SHAEC1308224601 Date: 13 May 2013

3M CHINA LIMITED

222# TIAN LIN ROAD, SHANGHAI (200233)

The following sample(s) was/were submitted and identified on behalf of the clients as : 3M 9471 LE

SGS Job No. :	SP13-012946 - SH
Date of Sample Received :	09 May 2013
Testing Period :	09 May 2013 - 13 May 2013
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

SGS-CSTC Standards Technical Services (Shanghai) Co.,Ltd.
Testing Center
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233
t E&E (86-21) 61402553 f E&E (86-21)64953679 www.cn.sgs.com
HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA13-082246.001	Transparent adhesive part

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 : With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs content by 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	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

Test Item(s)	Limit	Unit	MDL	*001*
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 :

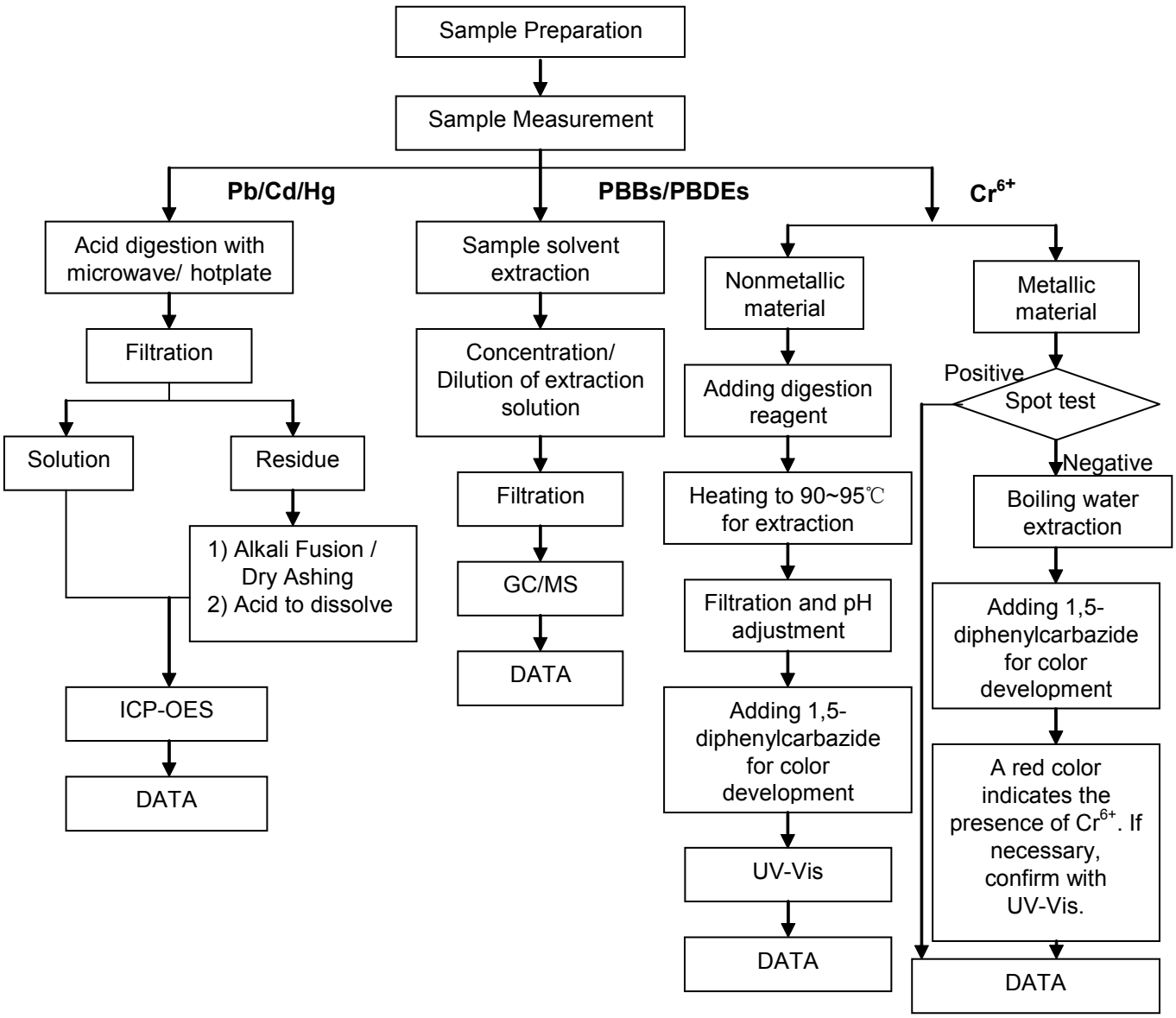
(1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II

SGS-CSTC Standards Technical Services (Shanghai) Co.,Ltd.
Testing Centre
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233
t E&E (86-21) 61402553 f E&E (86-21)64953679 www.cn.sgs.com
HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

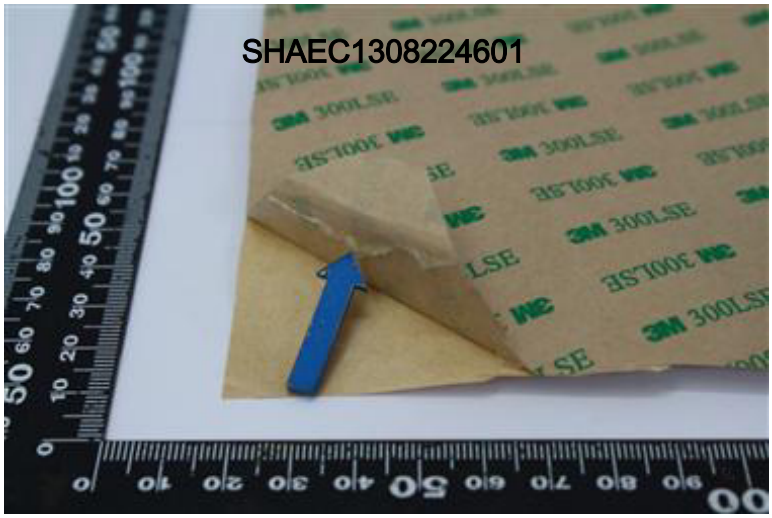
ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao/Gary Xu
2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Linda Li
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded)



Sample photo:



SHA13-082246.001

SGS authenticate the photo on original report only

*** End of Report ***

Test Report

COLORANT CHROMATICS TRADING (SHANGHAI) CO.,LTD.

1607 LI AN ROAD, MINHANG DISTRICT, SHANGHAI, 201100 ， CHINA

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

SGS Job No. :	SP13-007605 - SH
Lot No. :	S1209102
Date of Sample Received :	22 Mar 2013
Testing Period :	22 Mar 2013 - 26 Mar 2013
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

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA13-043903.001	Black solid pellet

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 : With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs content by 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	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

Test Item(s)	Limit	Unit	MDL	*001*
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 directive 2011/65/EU, Annex II

Halogen

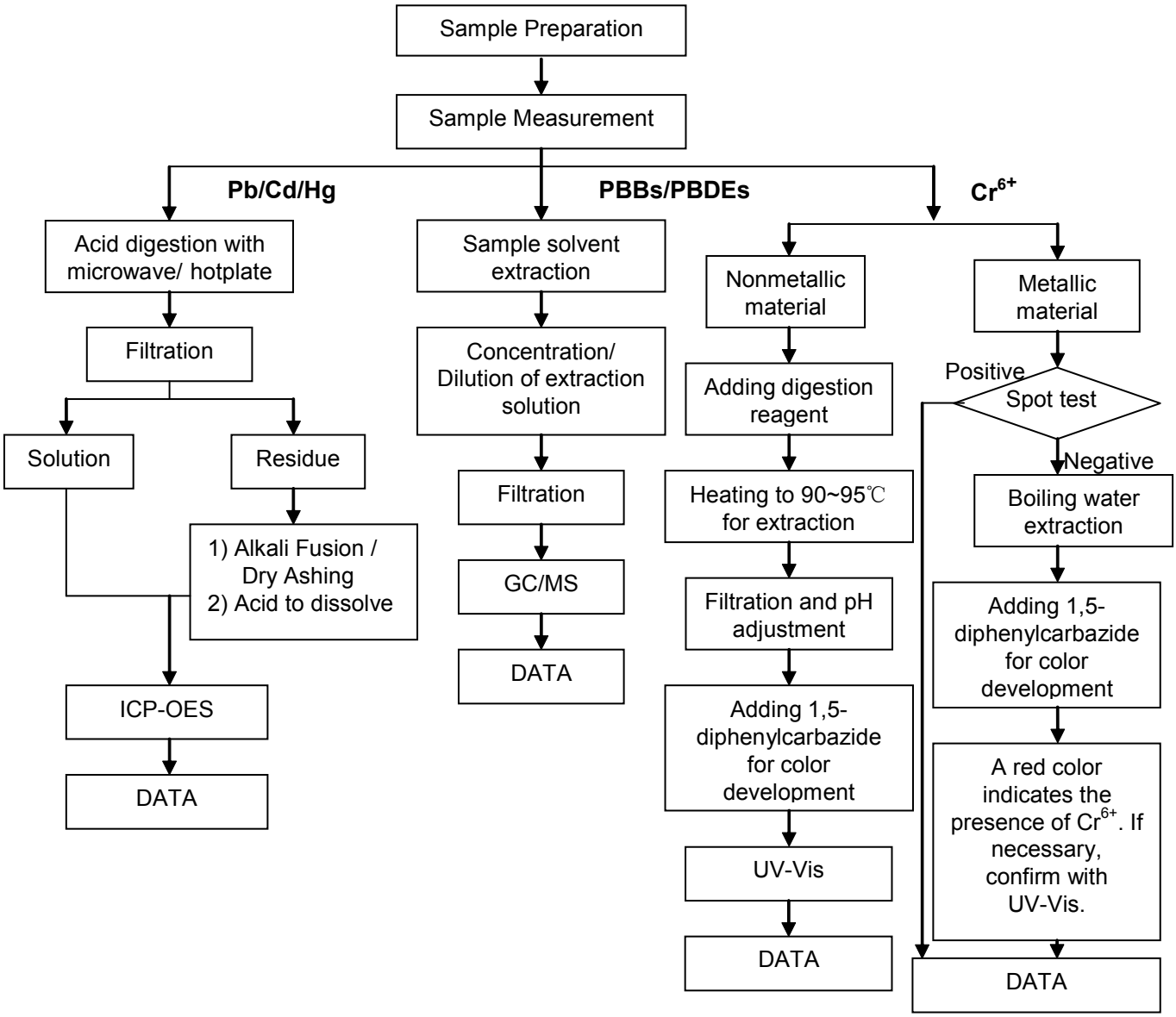
Test Method : With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

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

ATTACHMENTS

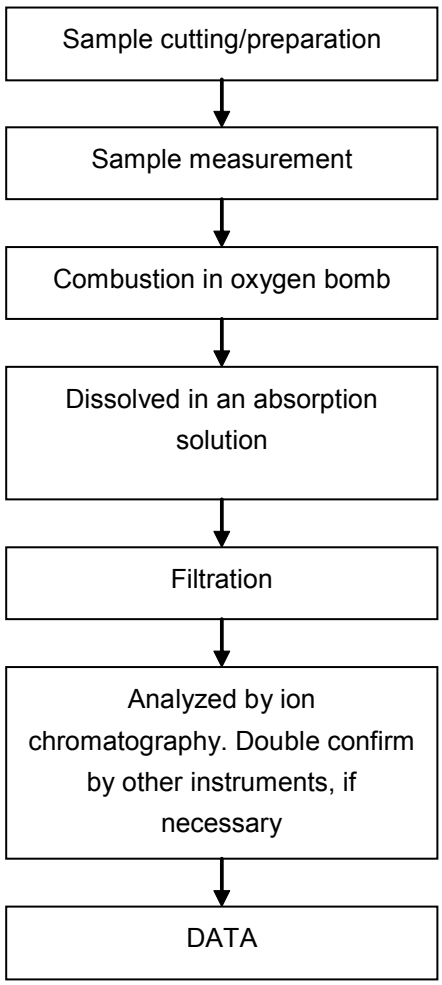
RoHS Testing Flow Chart

1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao/Gary Xu
2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Linda Li
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded)



Halogen Testing Flow Chart

1) Name of the person who made testing: Sisily Yin
2) Name of the person in charge of testing: Linda Li



Sample photo:

SHA13-043903.001

SGS authenticate the photo on original report only

*** End of Report ***

检测报告
Test Report

报告编号 RHS05F011891001E
Report No. RHS05F011891001E

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 Sample Name	电线电缆料 Wire and cable materials
样品型号 Part No.	FEP
样品接收日期 Sample Received Date	2013.08.22 Aug. 22, 2013
样品检测日期 Testing Period	2013.08.22-2013.08.26 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 **Test Method/Test Result(s)**	请参见下页。 Please refer to the following page(s).

主 检 Chen Lijuan
Tested by

批 准 Su Hongwei
Approved by

Su Hongwei
Senior Laboratory Manager

审 核 Zhong Yijun
Reviewed by

日 期 2013.08.26
Date

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

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

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

检测报告
Test Report

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

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

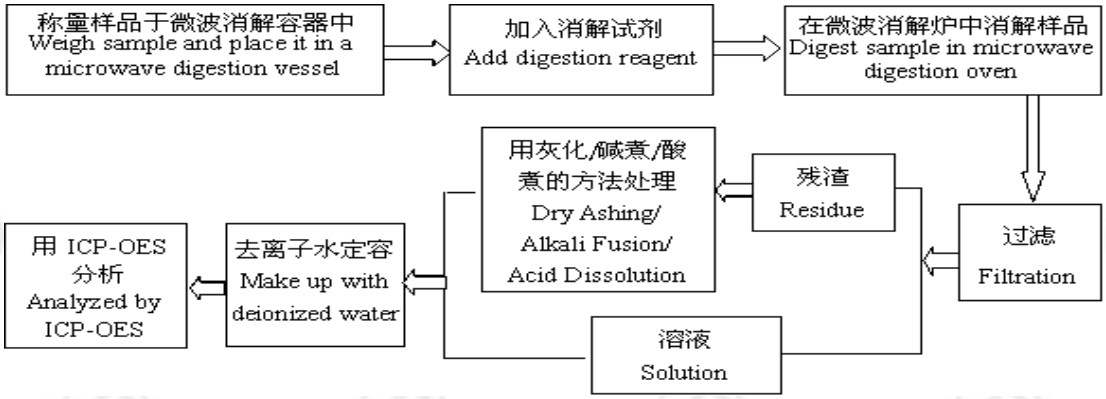
备注: 报告编号中“E”表示此报告为中英文对照版本。

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

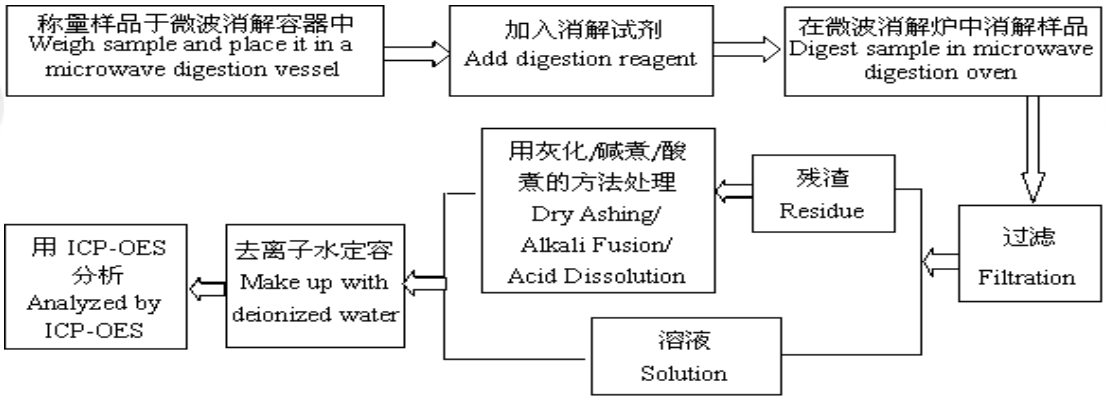
检测报告
Test Report

检测流程 Test Process

1. 铅(Pb), 镉(Cd)
Lead(Pb), Cadmium(Cd)

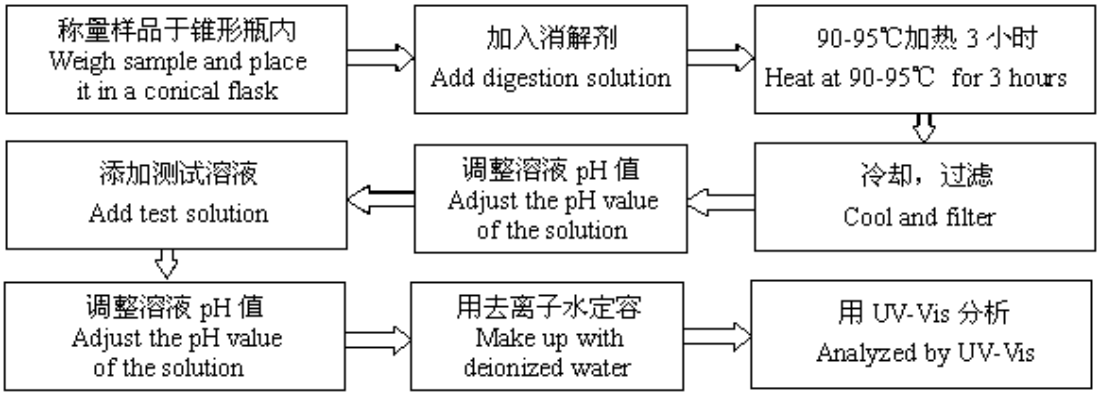


2. 汞(Hg)
Mercury(Hg)

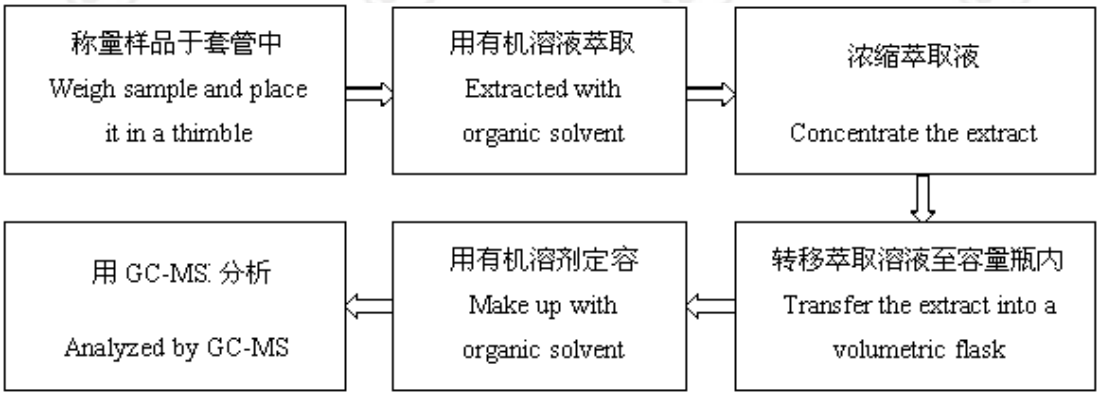


检测报告
Test Report

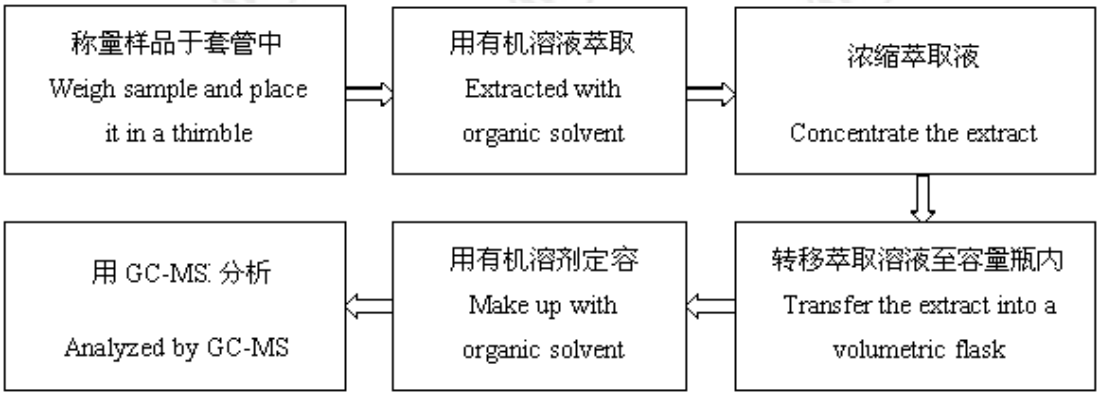
3. 六价铬(Cr(VI))
Hexavalent Chromium (Cr(VI))



4. 邻苯二甲酸酯
Phthalates

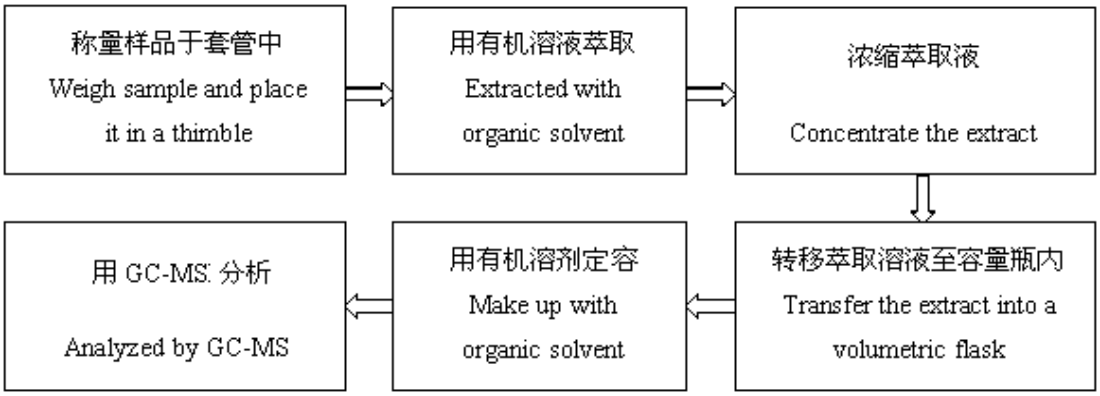


5. 多溴联苯(PBBs)，多溴二苯醚(PBDEs)
Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



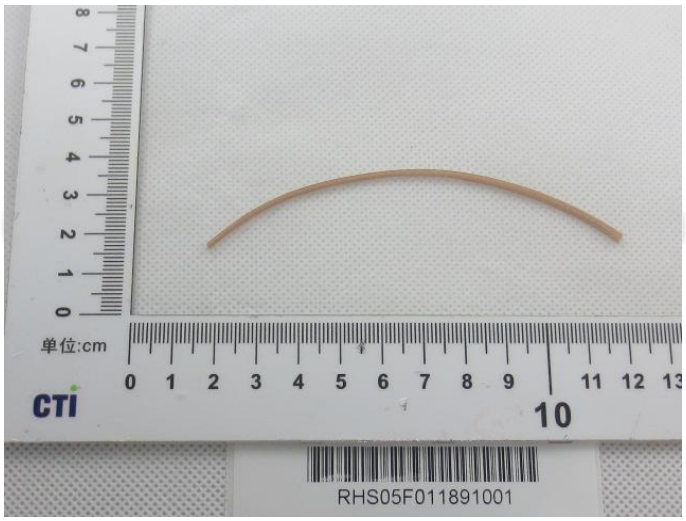
检测报告
Test Report

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



检测报告
Test Report

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　　第 1 页　共 8 页
Report No. RHS05F011891004E　　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 Sample Name	电线电缆料 Wire and cable materials
样品型号 Part No.	镀银铜丝 Silver-plated copper wire
样品接收日期 Sample Received Date	2013.08.22 Aug. 22, 2013
样品检测日期 Testing Period	2013.08.22-2013.08.26 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 **Test Method/Test Result(s)**	请参见下页。 Please refer to the following page(s).

主　检 Tested by: Chen Lijuan　　审　核 Reviewed by: Zhong Yijun
批　准 Approved by: Su Hongwei　　日　期 Date: 2013.08.26

Su Hongwei
Senior Laboratory Manager

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

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

检测报告
Test Report

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 银白色金属丝
Tested Sample/Part Description Silvery white metal wire

检测报告
Test Report

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.

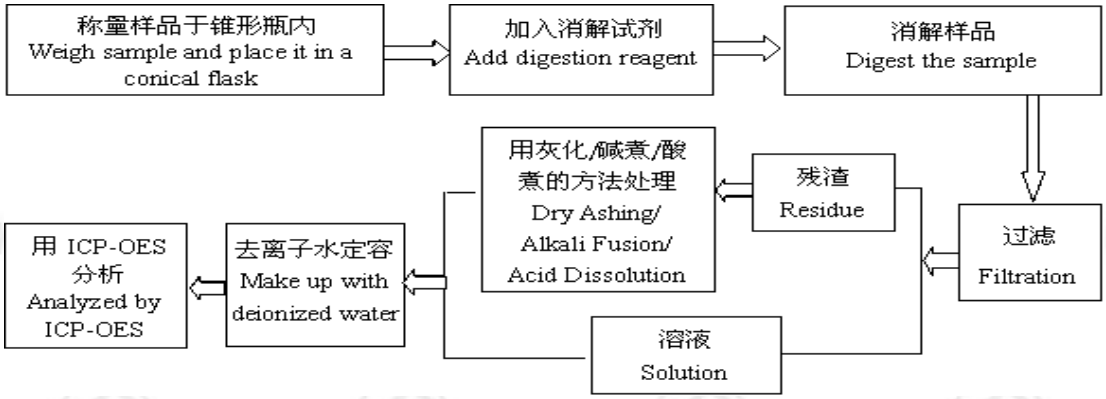
备注: **报告编号中"E"表示此报告为中英文对照版本。**

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

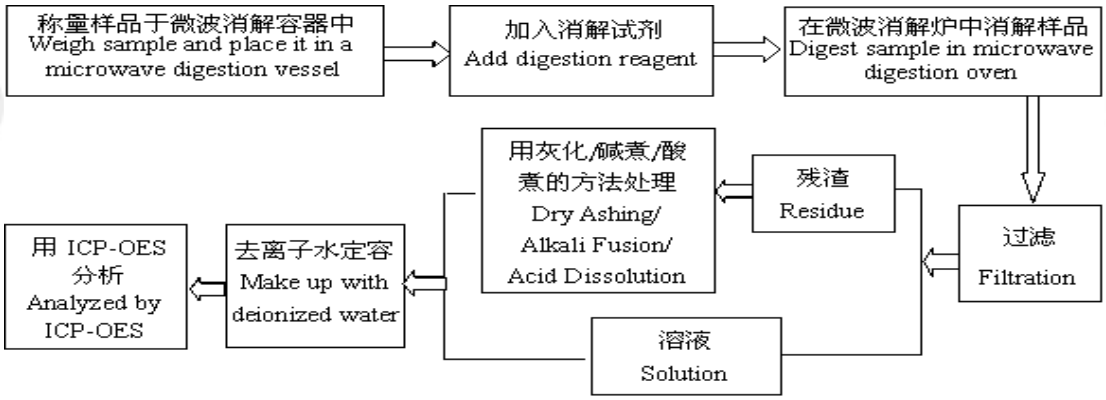
检测报告
Test Report

检测流程 Test Process

1. 铅(Pb), 镉(Cd)
Lead(Pb), Cadmium(Cd)

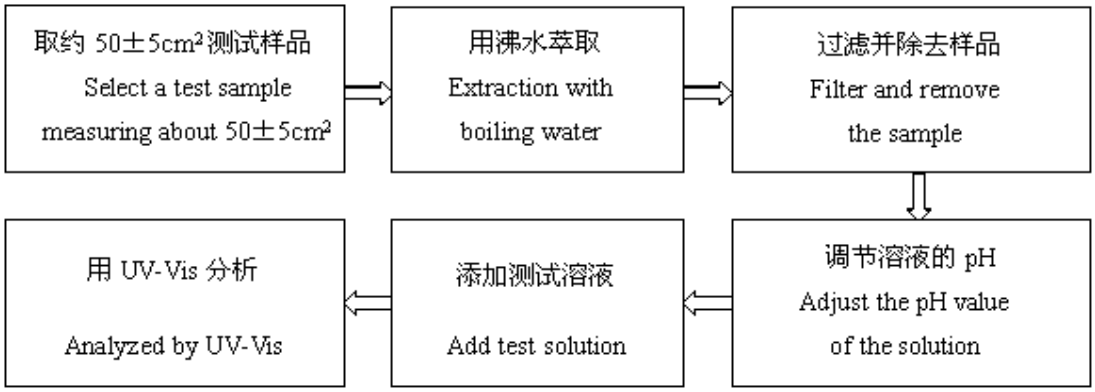


2. 汞(Hg)
Mercury(Hg)

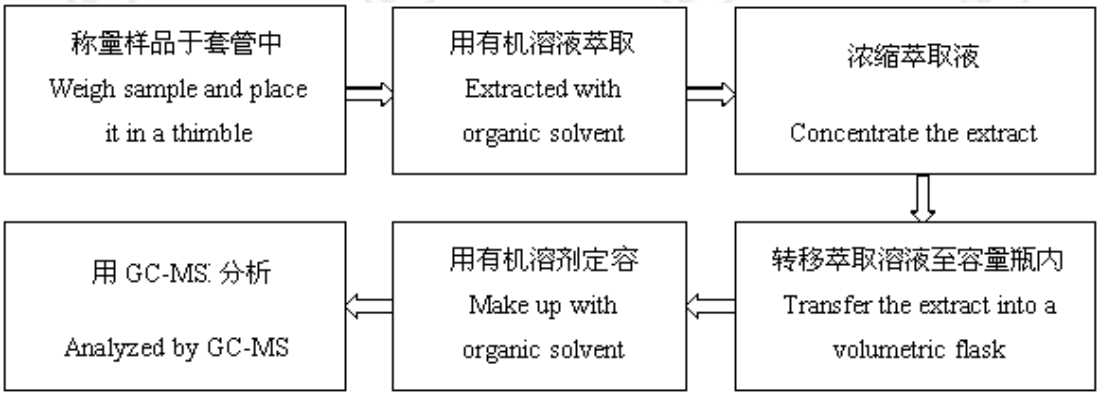


检测报告
Test Report

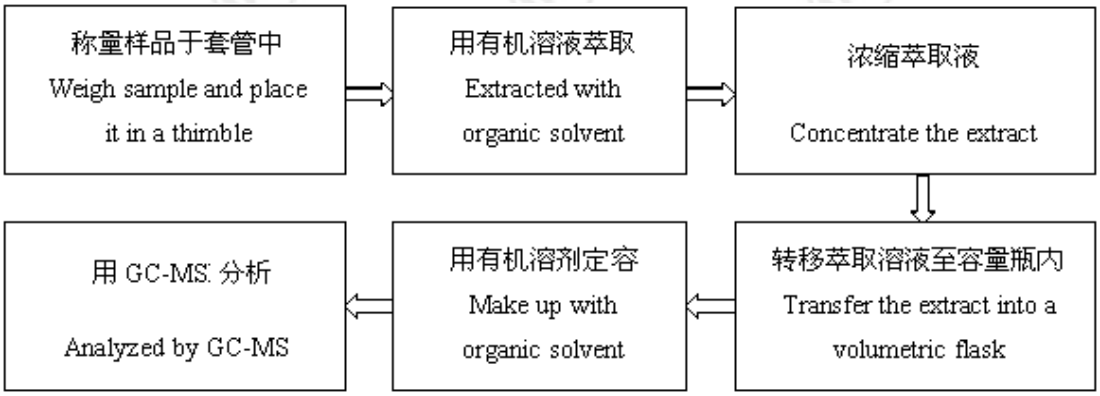
3. 六价铬(Cr(VI))
Hexavalent Chromium (Cr(VI))



4. 邻苯二甲酸酯
Phthalates

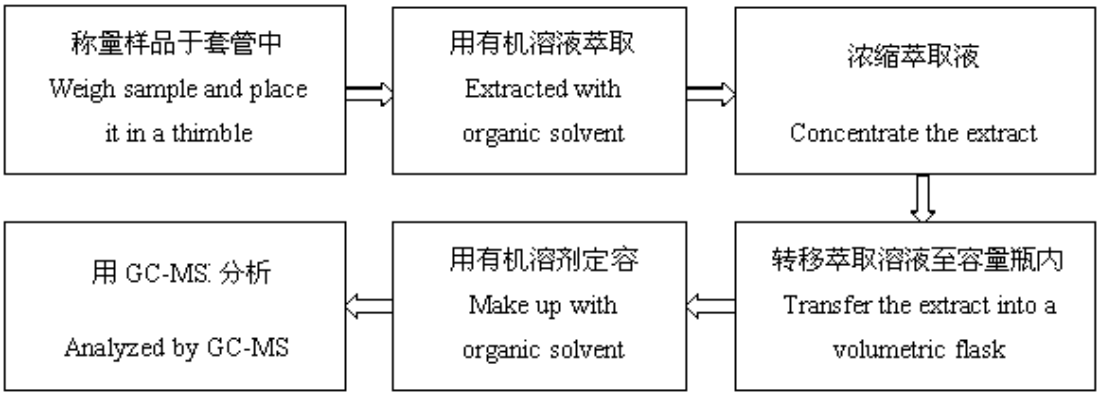


5. 多溴联苯(PBBs)，多溴二苯醚(PBDEs)
Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



检测报告
Test Report

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



检测报告
Test Report

样品图片
Photo(s) of the sample(s)

报告结束
*** End of report ***

检测报告
Test Report

报告编号 RHS05F011891003E　　第 1 页　共 8 页
Report No. RHS05F011891003E　　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 Sample Name	电线电缆料 Wire and cable materials
样品型号 Part No.	镀锡铜丝 Tinned copper wire
样品接收日期 Sample Received Date	2013.08.22 Aug. 22, 2013
样品检测日期 Testing Period	2013.08.22-2013.08.26 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 **Test Method/Test Result(s)**	请参见下页。 Please refer to the following page(s).

主　检 Tested by: Chen Lijuan　　审　核 Reviewed by: Zhong Yijun
批　准 Approved by: Su Hongwei　　日　期 Date: 2013.08.26

Su Hongwei
Senior Laboratory Manager

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

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

检测报告
Test Report

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 银色金属丝
Tested Sample/Part Description Silvery metal wire

检测报告
Test Report

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.

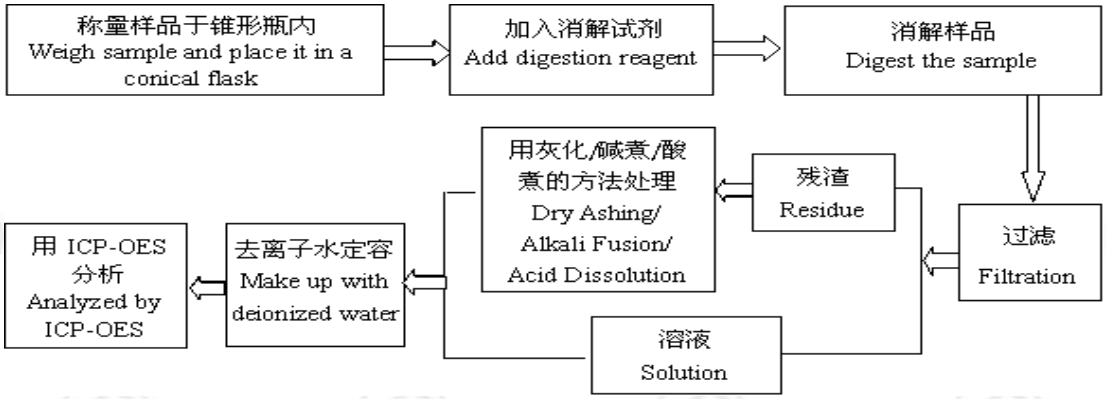
备注: 报告编号中"E"表示此报告为中英文对照版本。

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

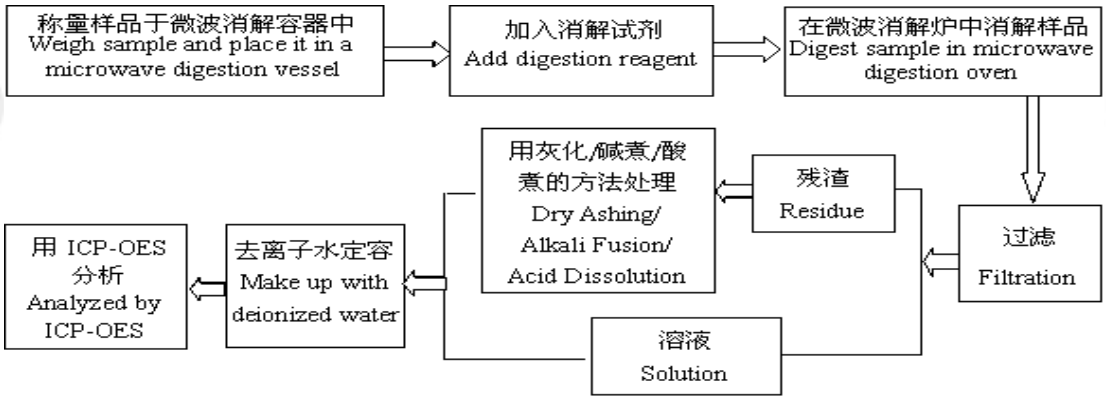
检测报告
Test Report

检测流程 Test Process

1. 铅(Pb), 镉(Cd)
Lead(Pb), Cadmium(Cd)

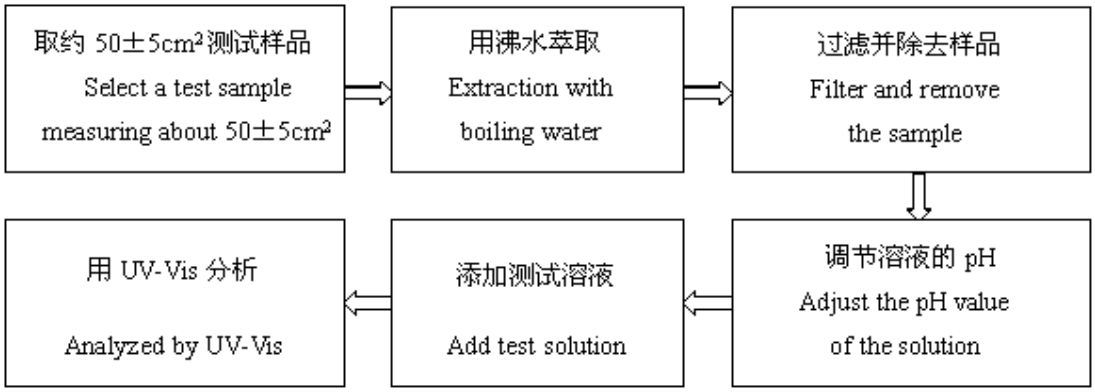


2. 汞(Hg)
Mercury(Hg)

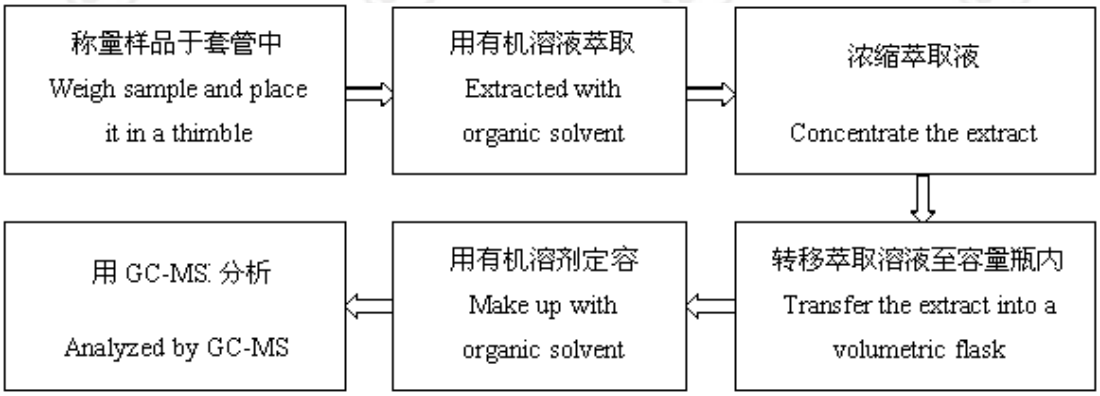


检测报告
Test Report

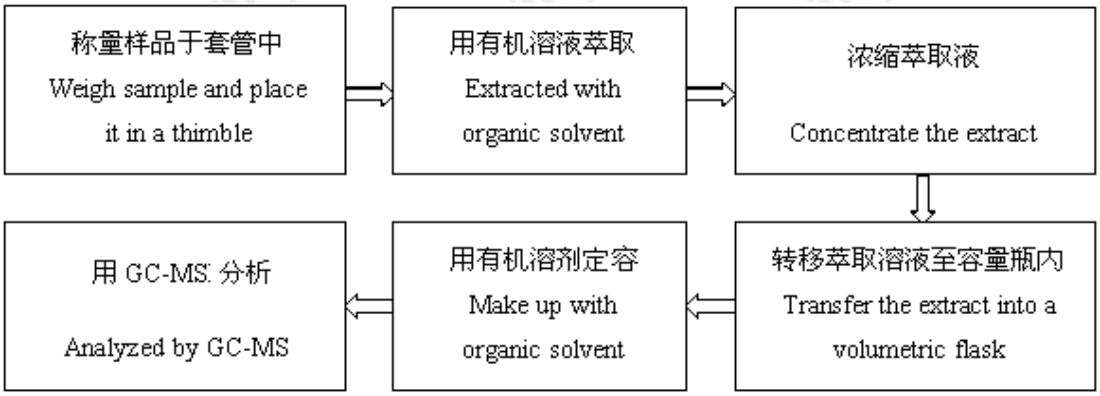
3. 六价铬(Cr(VI))
Hexavalent Chromium (Cr(VI))



4. 邻苯二甲酸酯
Phthalates

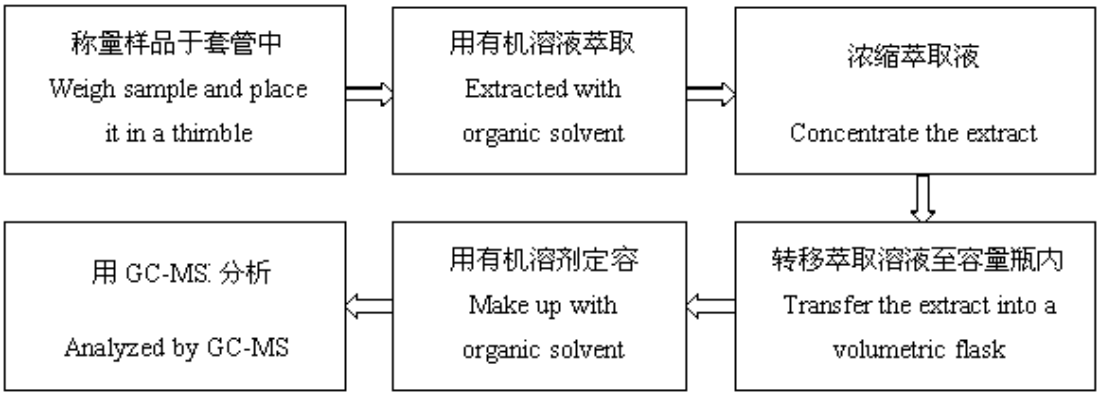


5. 多溴联苯(PBBs)，多溴二苯醚(PBDEs)
Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



检测报告
Test Report

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



检测报告
Test Report

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.

Test Report

No. : KA/2013/70363 Date : 2013/07/15 Page : 1 of 7

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 client as :

Sample Description	:	PBT
Style/Item No.	:	315NF ED3002 / Lot No.1874090
Color	:	ED3002
Sample Receiving Date	:	2013/07/08
Testing Period	:	2013/07/08 TO 2013/07/15
Sample Submitted By	:	POLYPLASTICS TAIWAN CO., LTD.

==========

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

Ray Chang

Ray Chang / Asst. Manager
Signed for and on behalf of
SGS Taiwan Limited

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: 2008 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	6.47
Mercury (Hg)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Sum of PBBs	mg/kg	With reference to IEC 62321: 2008 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: 2008 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.

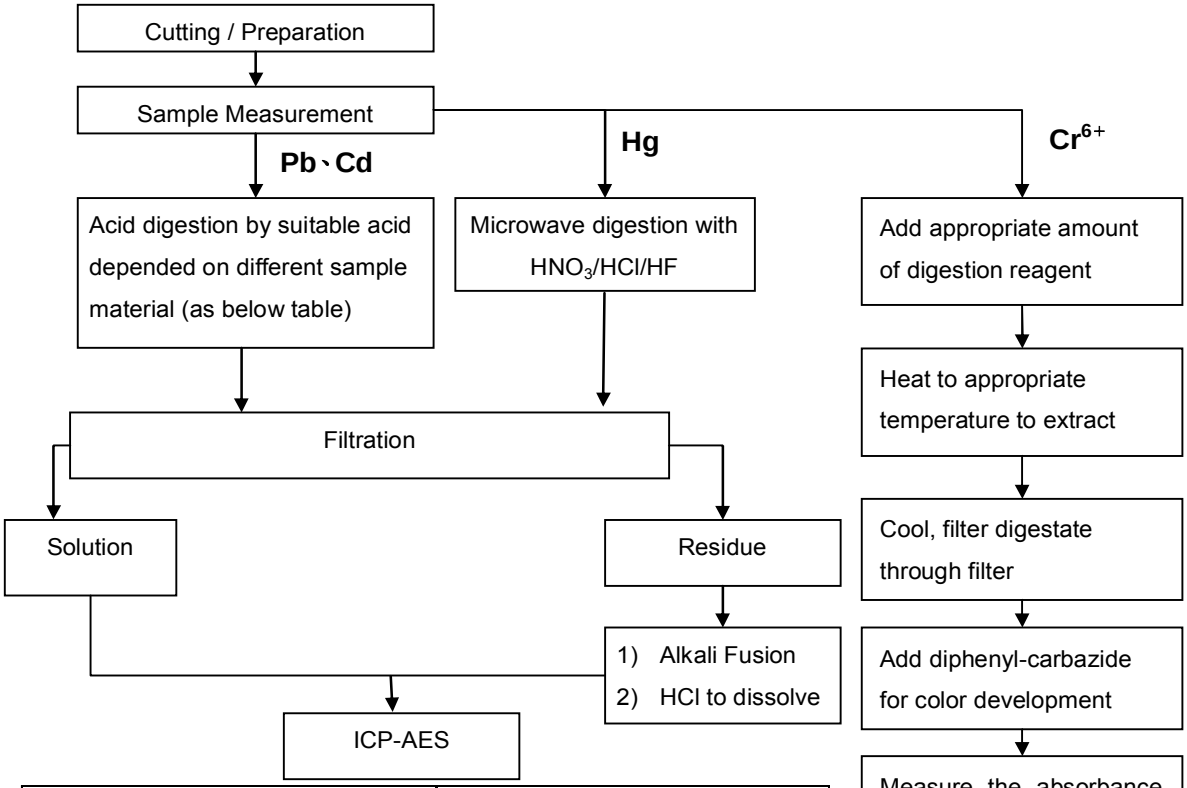
POLYPLASTICS TAIWAN CO., LTD.
NO.13, JIANYE RD., DALIAO DIST., KAOHSIUNG CITY 831, TAIWAN (R.O.C.)

Test Item (s):	Unit	Method	MDL	Result No.1
Halogen				
Halogen-Fluorine (F) (CAS No.: 014762-94-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	731
Halogen-Chlorine (Cl) (CAS No.: 022537-15-1)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 010097-32-2)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Iodine (I) (CAS No.: 014362-44-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

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

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

1) These samples were dissolved totally by pre-conditioning method according to below flow chart. （Cr6+ test method excluded）
2) Name of the person who made measurement: Alex Chang
3) Name of the person in charge of measurement: Ray Chang



Sample Material	Digestion Acid
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	Any acid to total digestion

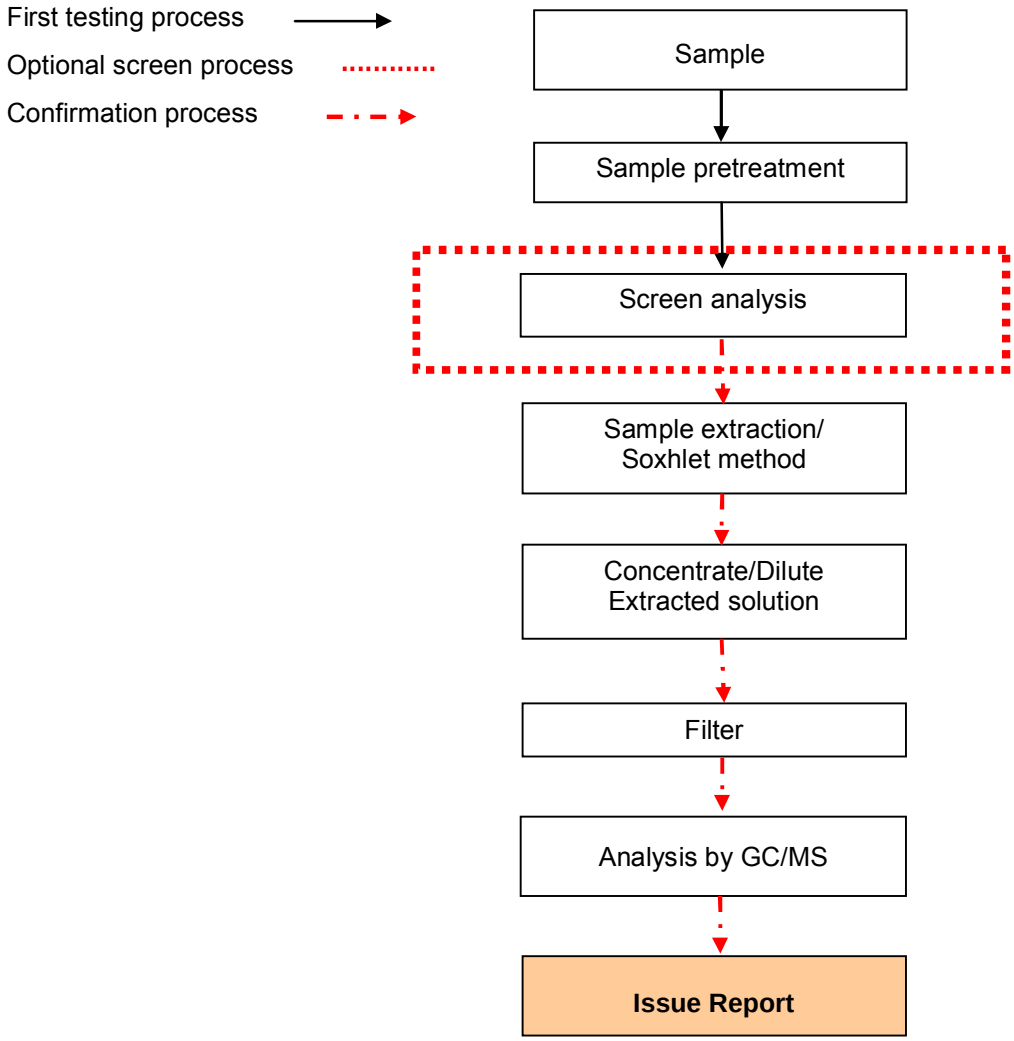
Note :** (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.
(2) For metallic material, add pure water and heat to boiling.

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: Anson Tsao

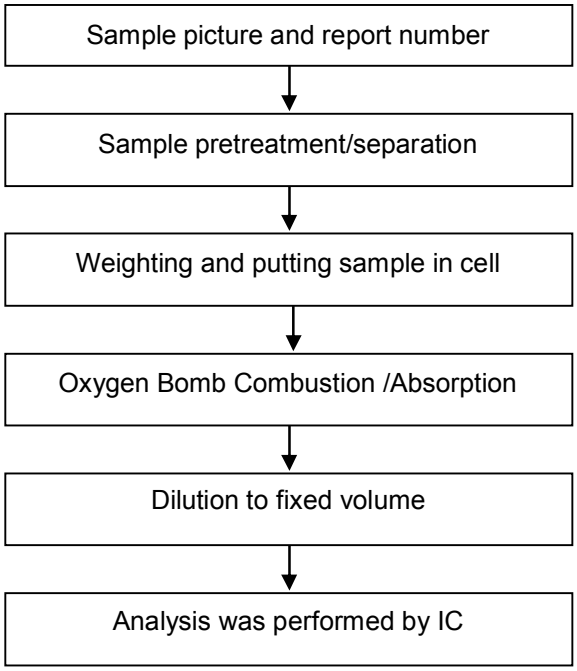
2) Name of the person in charge of measurement: Ray Chang



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



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/2013/70363

** End of Report **

検査報告書

三菱電機メテックス株式会社

神奈川県相模原市中央区宮下1-1-57

THE FOLLOWING SAMPLE(S) WAS/WERE SUBMITTED AND IDENTIFIED BY/ON BEHALF OF THE CLIENT AS:
以下のサンプルは顧客により提供され、顧客に代わって確認を行いました:

サンプル名	:	C5210R 製造ロット番号:12246
御社オーダーNo.	:	
サンプル受領日	:	2012/11/22
分析期間	:	2012/11/22 - 2012/12/04

TEST REQUESTED
分析項目 : SELECTED TEST(S) AS REQUESTED BY CLIENT.
分析項目は顧客の要求によります。

TEST METHOD(S)
分析方法 : WITH REFERENCE TO IEC62321 EDITION 1.0 2008-12 FOR RoHS 6 SUBSTANCES.
OTHER CHEMICALS WERE TESTED BY EACH APPROPRIATE METHOD.
RoHS6物質の分析はIEC62321第1.0版(2008年12月)を参照しました。
それ以外の化学物質についてはそれぞれに最適な方法で分析を行いました。

TEST RESULT(S)
分析結果 : PLEASE REFER TO THE NEXT PAGE(S).
以下のページをご参照願います。

大内　幸弘

品質管理者 / 大内 幸弘
SGSジャパン株式会社
ケミカルラボラトリー

検査報告書

三菱電機メテックス株式会社

神奈川県相模原市中央区宮下1-1-57

分析結果

項目	単位	結果	前処理	機器/場所	MDL
カドミウム(Cd)	mg/kg	検出せず	IEC62321 第1版 8,9,10章	ICP-OES	2
鉛(Pb)	mg/kg	検出せず	IEC62321 第1版 8,9,10章	ICP-OES	2
水銀(Hg)	mg/kg	検出せず	IEC62321 第1版 7章	ICP-OES	2
六価クロム(Cr(VI))	μg/㎠	検出せず	IEC62321 第1版 付属文書B	UV/VIS	0.01

補足: mg/kg = ppm, MDL(Method Detection Limit) = 方法下限値

注釈: Cr(VI)分析はサンプル表面積:12㎠を使用しました。
ご参考: 六価クロムの方法下限値はサンプル重量より2(ppm)に換算されます。

SGS Japan Inc.
YBP East Tower 12F, 134 Godo-cho Hodogaya-ku Yokohama 240-0005, Japan
t +81(0) 45 330 1100 f +81(0) 45 330 1108　URL: www.jp.sgs.com

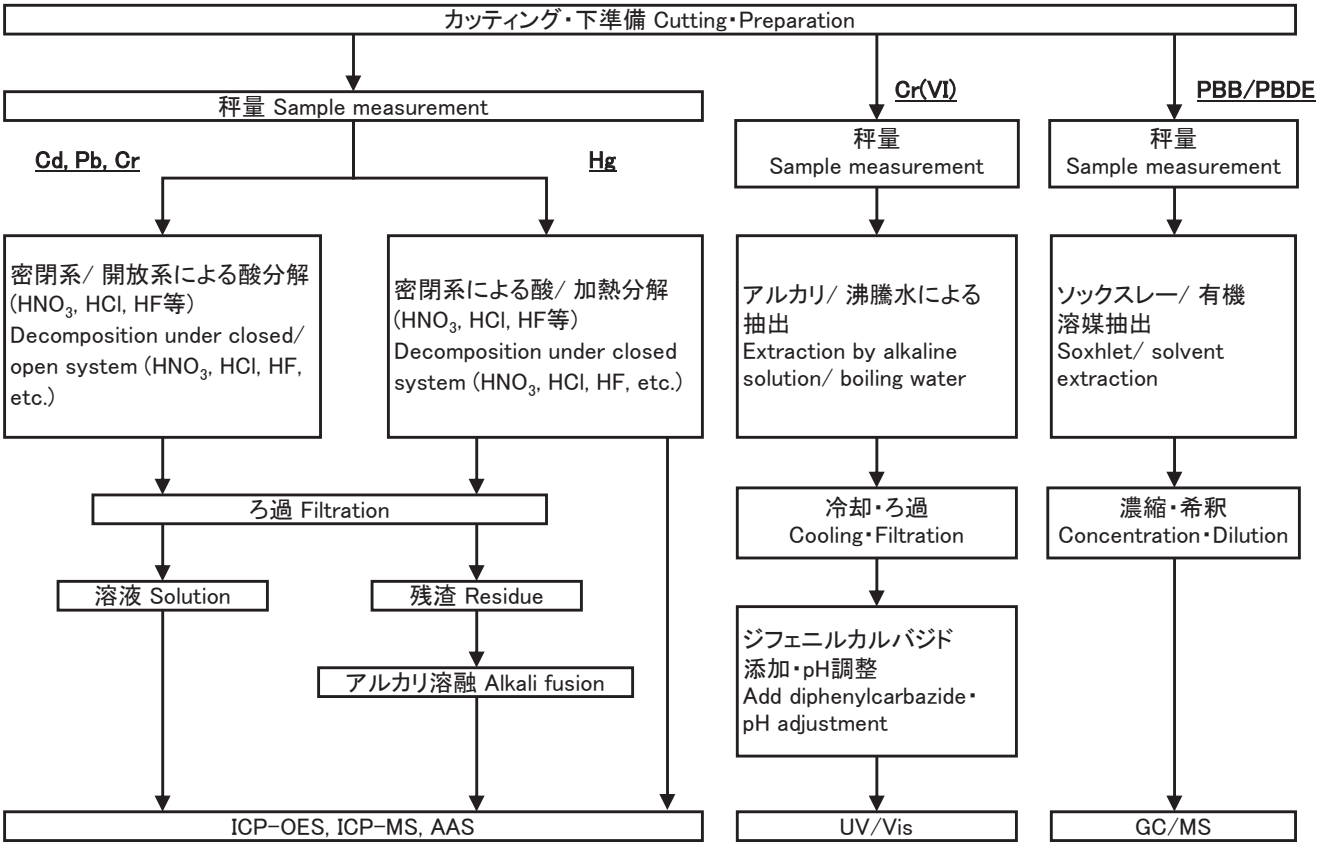
検査報告書

三菱電機メテックス株式会社

神奈川県相模原市中央区宮下1-1-57

分析フローチャート MEASUREMENT FLOW CHART

1)酸分解前処理において試料を完全分解しています。
The sample was dissolved/ decomposed totally by acid pre-conditioning method according to below flow chart.
2)Cd, Pb, Hg, Cr, Cr(VI)
分析担当者 Name of the person in charge of measurement: 野田　晴美　Harumi Noda
3)PBB/PBDE
分析担当者 Name of the person in charge of measurement: 大谷　真由美　Mayumi Otani
4)分析責任者 Name of the person responsible for measurement: 大谷　真由美 Mayumi Otani



検査報告書

報告書№JP/2012/110811　　日付:2012年12月5日　　

三菱電機メテックス株式会社

神奈川県相模原市中央区宮下1-1-57

サンプル画像

*** 以上 ***

SGS Japan Inc.
YBP East Tower 12F, 134 Godo-cho Hodogaya-ku Yokohama 240-0005, Japan
t +81(0) 45 330 1100 f +81(0) 45 330 1108　URL: www.jp.sgs.com

检测报告
Test Report

报告编号 RLSHF001373050001 第 1 页 共 5 页
Report No. RLSHF001373050001 Page 1 of 5

申请单位 昆山同心表面科技有限公司
Applicant KUNSHAN TONGXIN SURFACE SCIENCE AND TECHNOLOGY CO., LTD.
地 址 昆山市紫竹路 1698 号
Address NO. 1698 ZI ZHU ROAD KUN SHAN CITY

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 Sample Name	镀金层 Gold coating
样品接收日期	2013.02.21
Sample Received Date	Feb.21,2013
样品检测日期	2013.02.21-2013.02.25
Testing Period	Feb.21,2013 to Feb.25,2013
检测要求 Test Requested	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))，全氟辛烷磺酸(PFOS)进行测试。 As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium (Cr(VI)), Perfluorooctane Sulfonates(PFOS) in the submitted sample(s).

主 检 Verna chen. 审 核 Lucy Zhong
Tested by Reviewed by
批 准 Joy Su 日 期
Approved by Date 2013.02.25

Joy Su
Senior Laboratory Manager

No. 94221285

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

检测报告
Test Report

检测依据 Test Method

测试项目 Tested Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)	方法检测限 M.D.L.
铅(Pb) Lead	参考 IEC 62321:2008 Ed.1 * Refer to IEC 62321:2008 Ed.1 *	ICP-OES	2mg/kg
镉(Cd) Cadmium	参考 IEC 62321:2008 Ed.1 * Refer to IEC 62321:2008 Ed.1 *	ICP-OES	2mg/kg
汞(Hg) Mercury	参考 IEC 62321:2008 Ed.1 * Refer to IEC 62321:2008 Ed.1 *	ICP-OES	2mg/kg
六价铬(Cr(VI)) Hexavalent Chromium	IEC 62321:2008 Ed.1Annex B	UV-Vis	/
全氟辛烷磺酸(PFOS) Perfluorooctane Sulfonates	参考 US EPA 3550C:2007 Refer to US EPA 3550C:2007	LC-MS-MS	0.5μg/m^2

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result
铅 Lead (Pb)	N.D.
镉 Cadmium (Cd)	N.D.
汞 Mercury (Hg)	N.D.
六价铬 Hexavalent Chromium (Cr(VI))	Negative

测试项目 Tested Item(s)	结果 Result
全氟辛烷磺酸(PFOS) Perfluorooctane Sulfonates(PFOS)	N.D.

测试样品/部位描述 金色镀层
Tested Sample/Part Description Golden plating

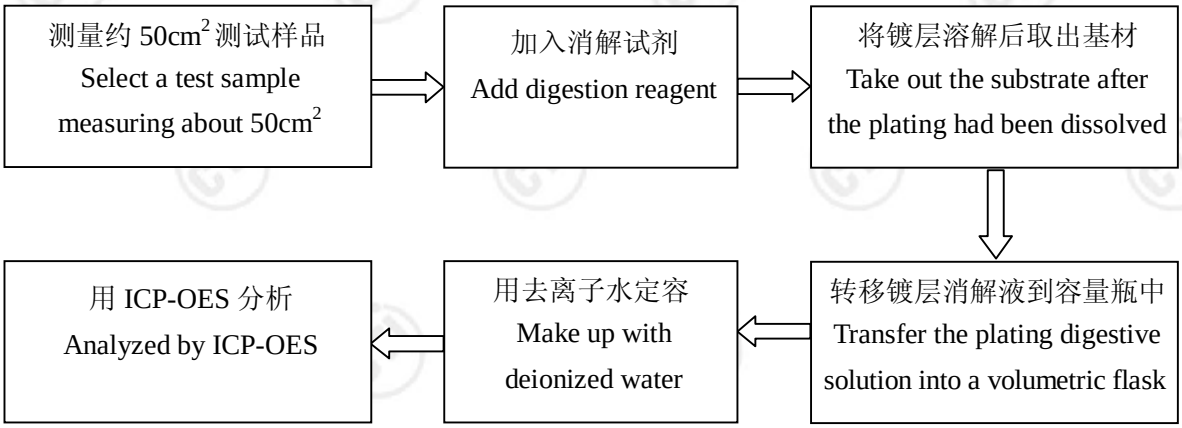
检测报告
Test Report

注释: -N.D. = 未检出 (小于方法检测限).
-mg/kg=ppm=百万分之几.
-*=镀层采用合适的酸液退镀，退镀液经 ICP-OES 测试.
-Negative 表示阴性. 阴性=不含有六价铬, 即由表面积为 50cm^2 的样品所萃取出来的溶液中的六价铬的浓度小于 0.02mg/kg。

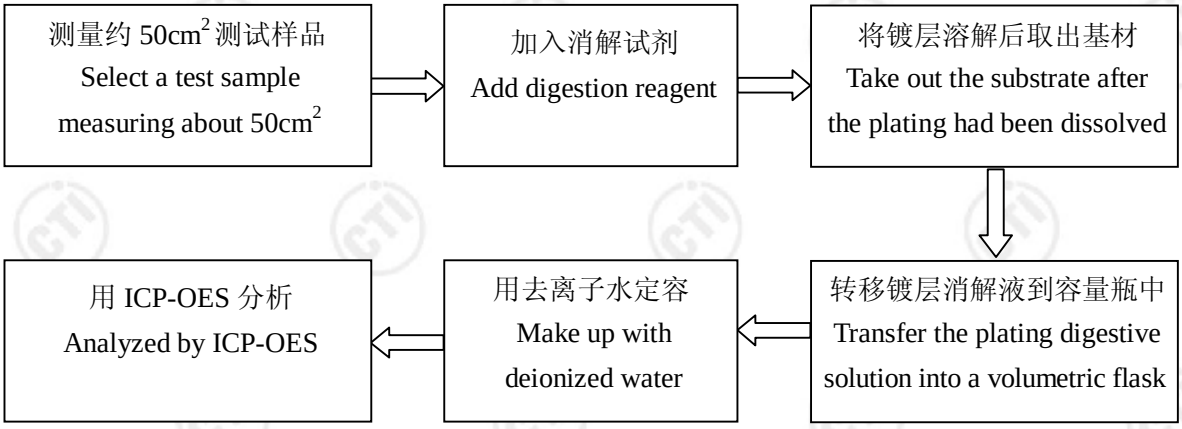
Note: -M.D.L. = Method Detection Limit
-N.D. = Not Detected (<M.D.L.)
-mg/kg= ppm =parts per million
-*=Appropriate acid is used for deplating, and the solution is analyzed by ICP –OES.
-Negative = Absence of Cr (VI). The Cr (VI) concentration detected in the boiling water extraction solution is less than 0.02 mg/kg with 50cm^2 sample surface area used.

检测流程 Test Process

1. 铅(Pb)，镉(Cd) Lead(Pb), Cadmium(Cd)

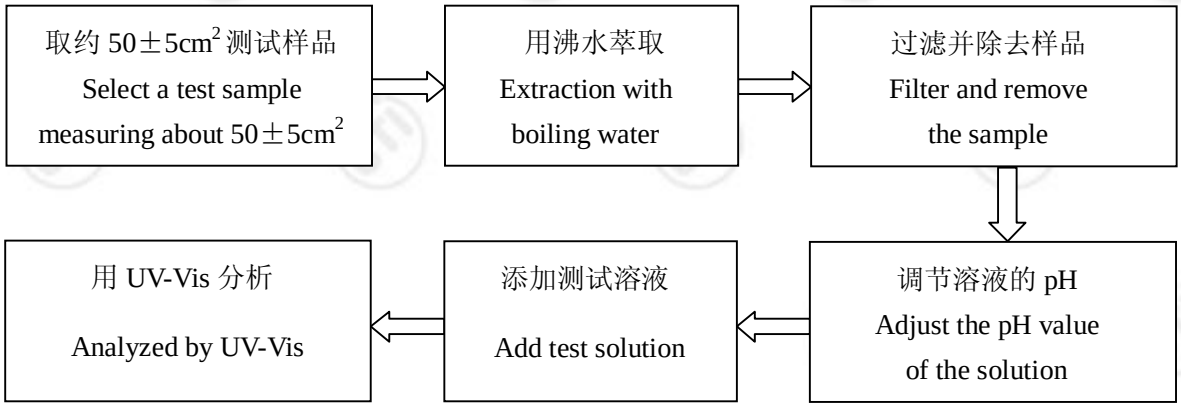


2. 汞(Hg) Mercury(Hg)

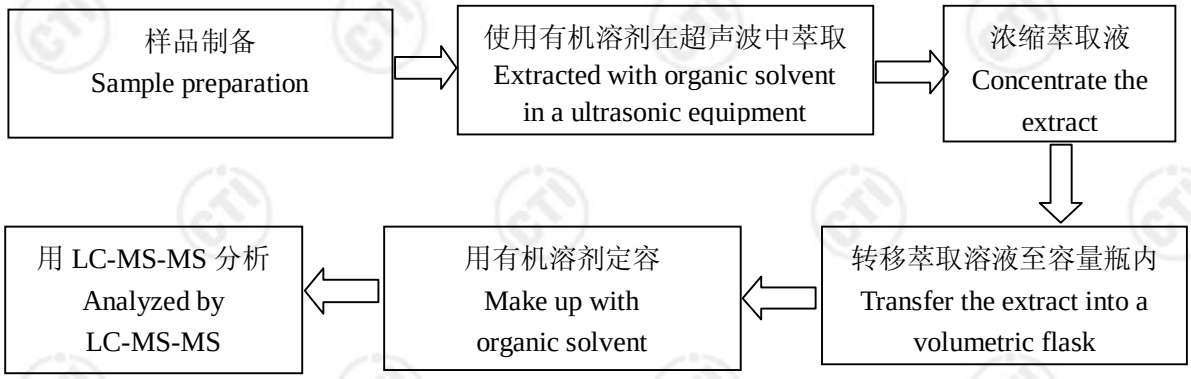


检测报告
Test Report

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

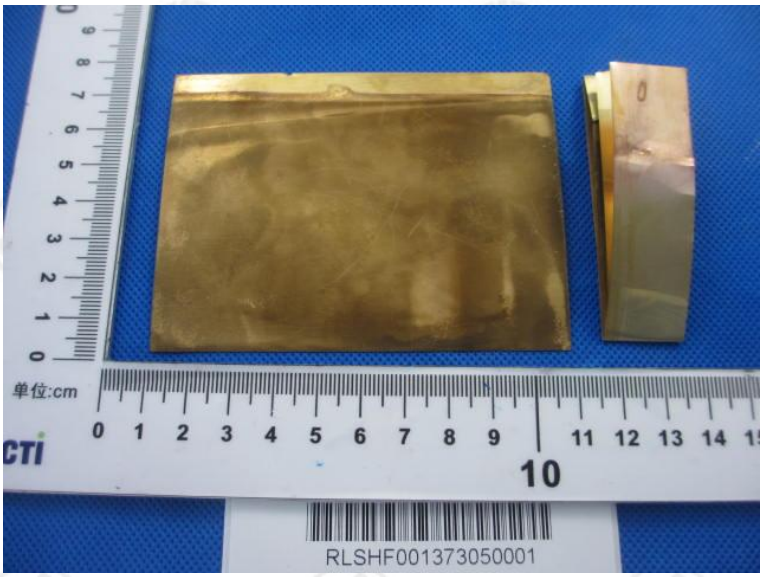


4.全氟辛烷磺酸(PFOS) Perfluorooctane Sulfonates(PFOS)



检测报告
Test Report

样品照片
Photo of the sample



*** 报告结束 ***
***End of report ***