



## ICP Test Report Certification Packet

Company name: Littelfuse, Inc.

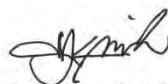
Product Series: 3AB FUSE

Product #: 324xxxP Series

Issue Date: November 5, 2012

It is hereby certified by Littelfuse, Inc. that there is neither RoHS (recast 2011/65/EU of RoHS Directive 2002/95/EC)-restricted substance nor such use, for materials to be used for unit parts, for packing/packaging materials, and for additives and the like in the manufacturing processes. In addition, it is hereby reported to you that the parts and sub-materials, the materials to be used for unit parts, the packing/packaging materials, and the additives and the like in the manufacturing processes, are all composed of the following components.

Issued by:

  
KRISTEEN BACILA

<Global EHS Engineer>

(1) Parts, sub-materials and unit parts

This document covers the 3AB Fuse RoHS-Compliant series products manufactured by Littelfuse, Inc.

< Raw Materials Used

Please see Table 1

(2) The ICP data on all measurable substances

Please see appropriate pages as identified in Table 1

Remarks :

**Table 1: List of Raw Materials covered by this report**

<b>Total Parts</b>	<b>Raw Material Part Number</b>	<b>Raw Material Description</b>	<b>Page(s)</b>
1	3M 3779-PG (087244)	HMA	3-7 8-11
2	910-005/ 910-282	Cap	12-15
3	917-481****-P1	Element – Zinc alloy	16-19
4	(917-445****-P / 917-48****-P)	Element – Brass Cu	20-23
5	910-054/910-055/ 910-061/910-068/ 934-055	Overcap	24-27
6	C610 (909-162/909-165)	Ceramic Body	28-59
7	YTW206 (692529)	Solder	60-64
8	AIM230 Fast Core H RSA605 (692539-003)	Solder	65-69
9	425901	Ink - red	70-80
10	425-907	Ink - green	81-91
11	082xxx	Element –Ag Cu plated	92-101
12	11-1175 (497xxx/ 497xxx-001)	Element – Ni42Fe58MCu	102-108
13	EP608 (087355)	Glue (RoHS & Halogens)	109-120
14	090184	Filler	121-129
15	090187	Filler	130-138
16	091254	Sand	139-147
17	082xxx-001/ 082xxx	Tinned wire	148-157
18	YTW108 (692535-003)	Solder	158-162



## Test Report

No. SHAEC1119525001

Date: 07 Dec 2011

Page 1 of 5

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 3779-PG

SGS Job No. : SP11-036760 - SH  
Date of Sample Received : 03 Dec 2011  
Testing Period : 03 Dec 2011 - 07 Dec 2011  
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.

Fan Jingjie, JJ  
Approved Signatory

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SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.  
Testing Laboratory

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Member of the SGS Group (SGS SA)

## Test Report

No. SHAEC1119525001

Date: 07 Dec 2011

Page 2 of 5

Test Results :

### Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA11-195250.001	Yellow solid

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 (Cr(VI))	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

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## Test Report

No. SHAEC1119525001

Date: 07 Dec 2011

Page 3 of 5

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 :

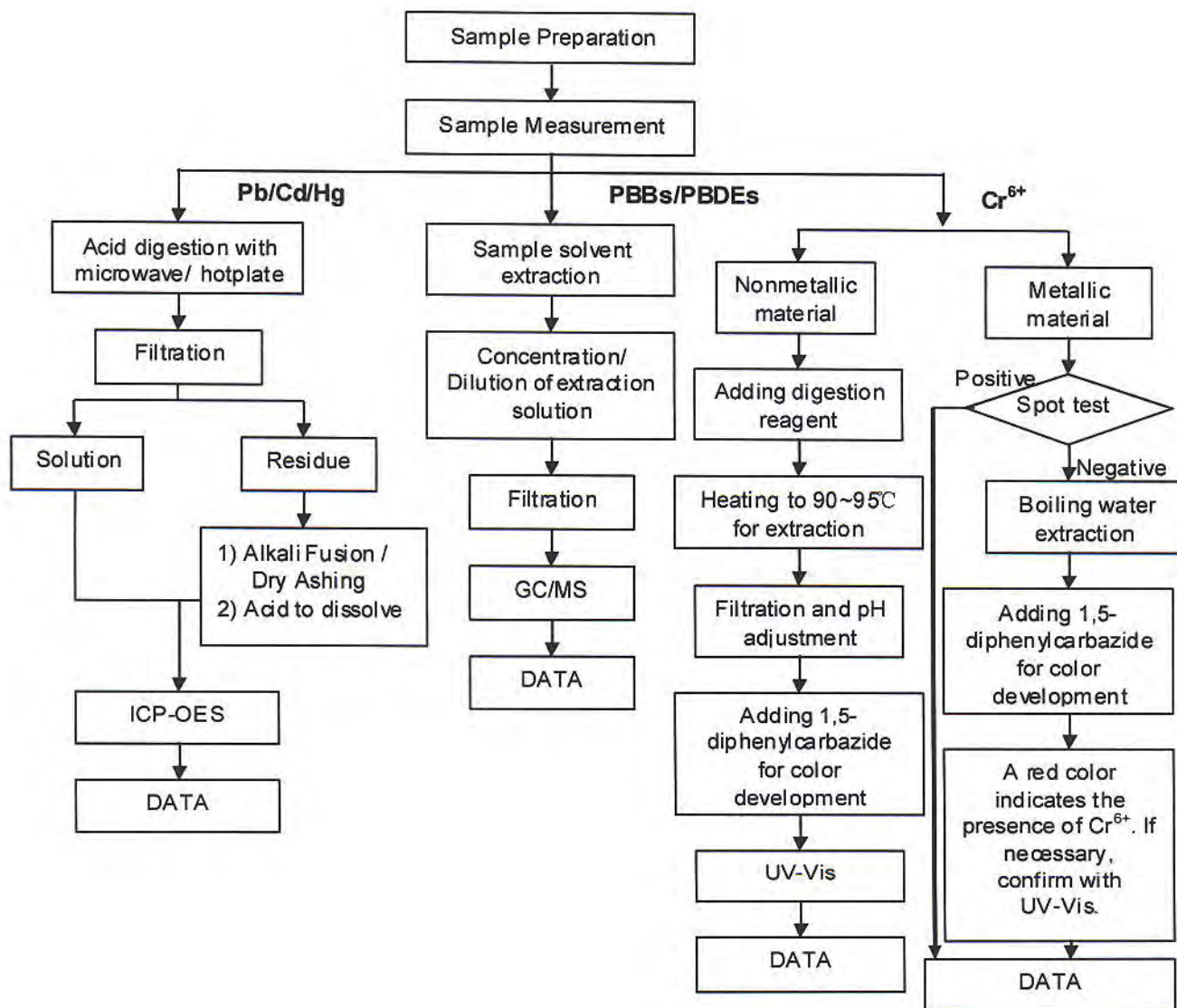
(1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II

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## 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/ Elim Lin
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded)



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## Test Report

No. SHAEC1119525001

Date: 07 Dec 2011

Page 5 of 5

Sample photo:



SGS authenticate the photo on original report only

\*\*\* End of Report \*\*\*

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## Test Report

No. SHAEC1119525002

Date: 07 Dec 2011

Page 1 of 4

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 3779-PG

SGS Job No. : SP11-036760 - SH  
Date of Sample Received : 03 Dec 2011  
Testing Period : 03 Dec 2011 - 07 Dec 2011  
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.

Fan Jingjie, JJ  
Approved Signatory

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## Test Report

No. SHAEC1119525002

Date: 07 Dec 2011

Page 2 of 4

Test Results :

### Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA11-195250.001	Yellow solid

Remarks :

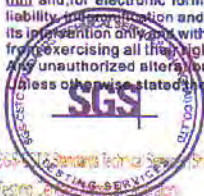
- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL )
- (4) "-" = Not Regulated

### 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

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Testing Service (Shanghai) Co., Ltd.

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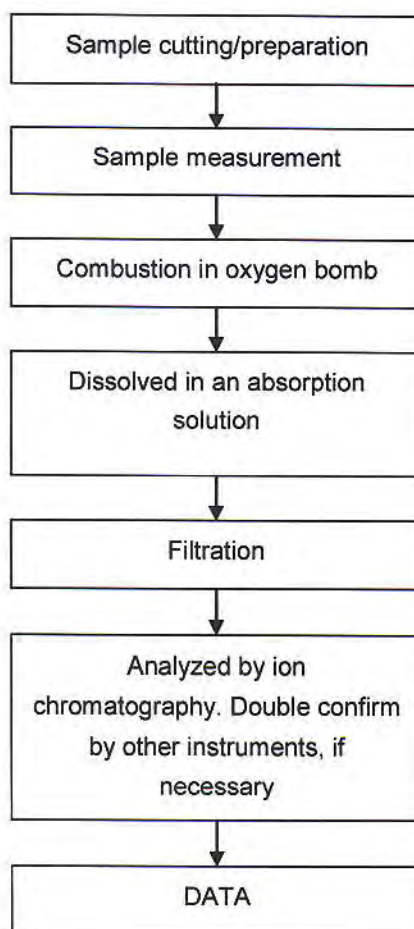
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## ATTACHMENTS

### Halogen Testing Flow Chart

- 1) Name of the person who made testing: Daisy Gong
- 2) Name of the person in charge of testing: Alex Jiang



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## Test Report

No. SHAEC1119525002

Date: 07 Dec 2011

Page 4 of 4

Sample photo:



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\*\*\* End of Report \*\*\*

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# TEST REPORT

NO.: A002E11121307-1R02

Date: Dec.15, 2011

Page 1 of 4

**Customer:** SuZhou FuHong Electronic Industrial Co., Ltd.

**Address:** NO. 89 WEI DU ROAD, WANGTING TOWN, XIANGCHENG DISTRICT, SUZHOU, CHINA

**Report on the submitted sample said to be**

**Sample name:** Copper shell

**Model:** /

**Item/Lot No.:** /

**Material:** /

**Description:** /

**Buyer:** /

**Supplier:** /

**Manufacturer:** /

**Sample received date:** Dec.13,2011

**Testing period:** From Dec.13,2011 to Dec.15,2011

## Testing Requested

As specified by client, to determine the Lead, Cadmium, Mercury & Hexavalent Chromium content in the submitted sample in accordance with Directive 2002/95/EC (RoHS).

## Testing method:

Testing Item	Pretreatment method	Measuring instrument	MQL
Lead (Pb)	IEC 62321: 2008, section 9	ICP-OES	2mg/kg
Cadmium (Cd)	IEC 62321: 2008, section 9	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321: 2008, section 7	ICP-OES	2 mg/kg
Chromium (Cr VI)	IEC 62321: 2008, Annex B	UV-VIS	0.02mg/kg*

## Note:

-\* 0.02 mg/kg refers to the MQL of sample extraction liquid.

## Conclusion:

-When tested as specified the submitted sample complied with the requirements of commission Decision of 18 Aug 2005 amending Directive 2002/95/EC notified under document 2005/618/EC.

\*\*\*\*\*FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)\*\*\*\*\*

Project Leader  
(Engineer)

*Maggie*

Approved by  
(Lab manager)

*Wickay*

Inspected by

(Technical manager)

*Wei kin*

SHENZHEN AOV TESTING TECHNOLOGY CO.,LTD.KUNSHAN BRANCH

No.8,Minguan Road North,Zhoushi,Kunshan,Jiangsu,China

Fax : 86-512-5510 8808 Http: //www.aovt.com

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Hotline

86-512-5510 8000

# TEST REPORT

NO.: A002E11121307-1R02

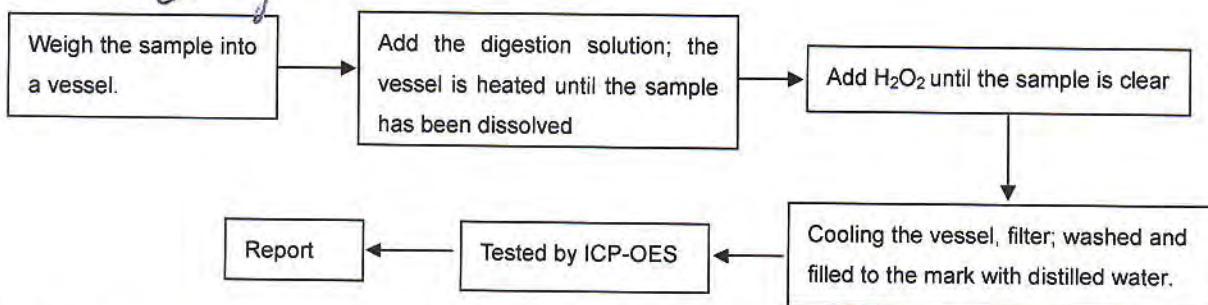
Date: Dec.15, 2011

Page 2 of 4

## Test Flow:

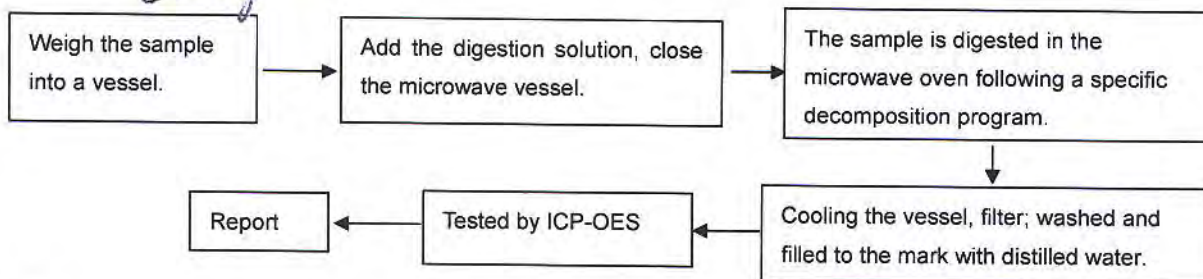
1. To Determine Lead, Cadmium Content: (Metal substrate)

Tested by: *Condy*



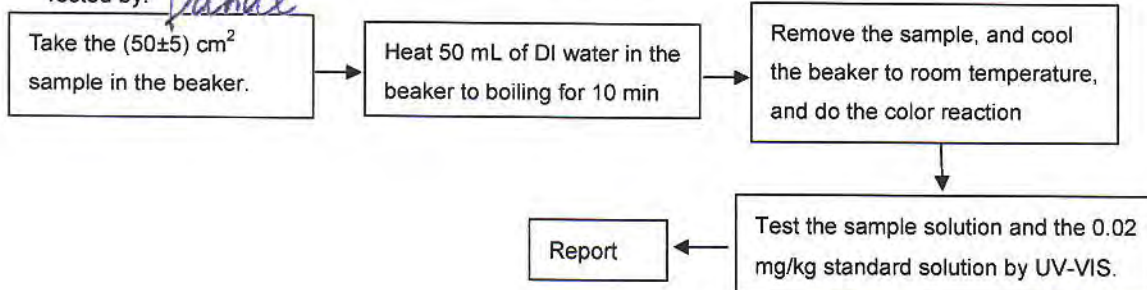
2. To Determine Mercury Content: (Metal substrate)

Tested by: *Condy*



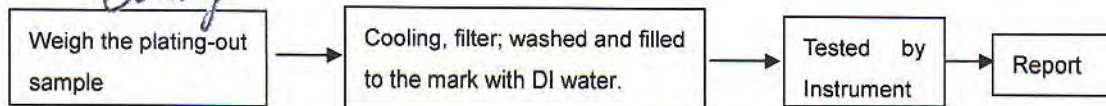
3. To Determine Hexavalent Chromium Content (boiling- water- extraction): (Metal substrate)

Tested by: *Danae*



4. To Determine Lead, Cadmium and Mercury Content: (Plating)

Tested by: *Condy*



# TEST REPORT

NO.: A002E11121307-1R02

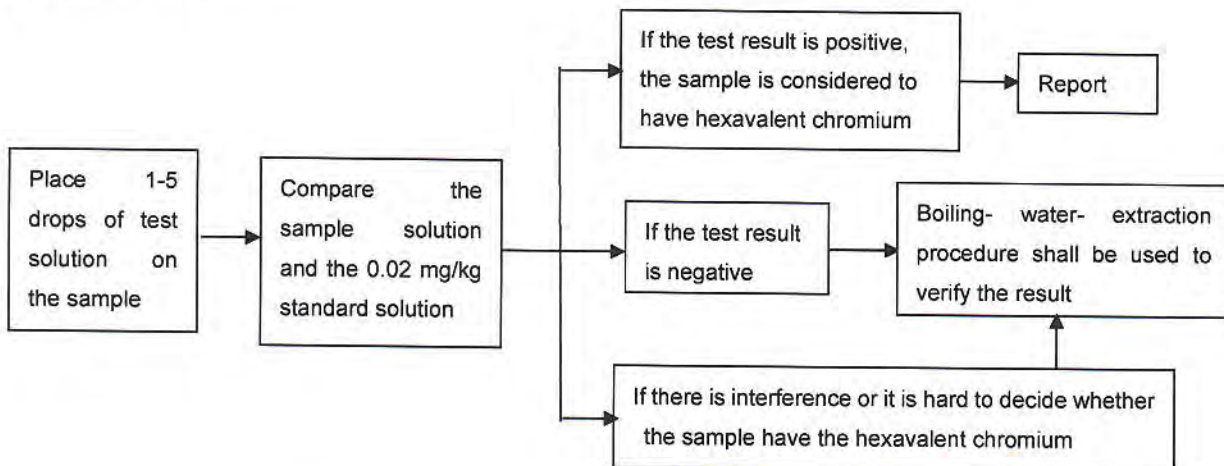
Date: Dec.15, 2011

Page 3 of 4

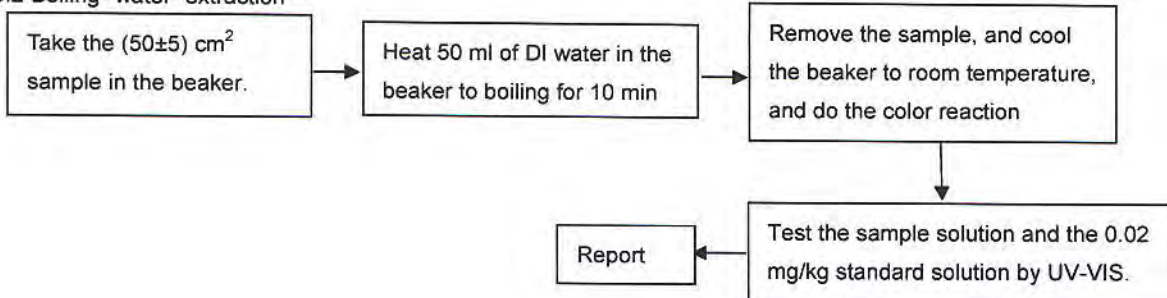
5. To Determine Hexavalent Chromium Content in colorless and colored chromate coating on metals: (Plating)

Tested by: *Danale*

## 5.1 Spot-test



## 5.2 Boiling- water- extraction



## Test Results:

Item	Unit	RoHS Limit	Result	
			Substrate	Plating*
Lead (Pb)	mg/kg	1000	N.D.	N.D.
Cadmium (Cd)	mg/kg	100	N.D.	N.D.
Mercury (Hg)	mg/kg	1000	N.D.	N.D.
Chromium (CrVI)	mg/kg	1000	Negative	Negative

# TEST REPORT

NO.: A002E11121307-1R02

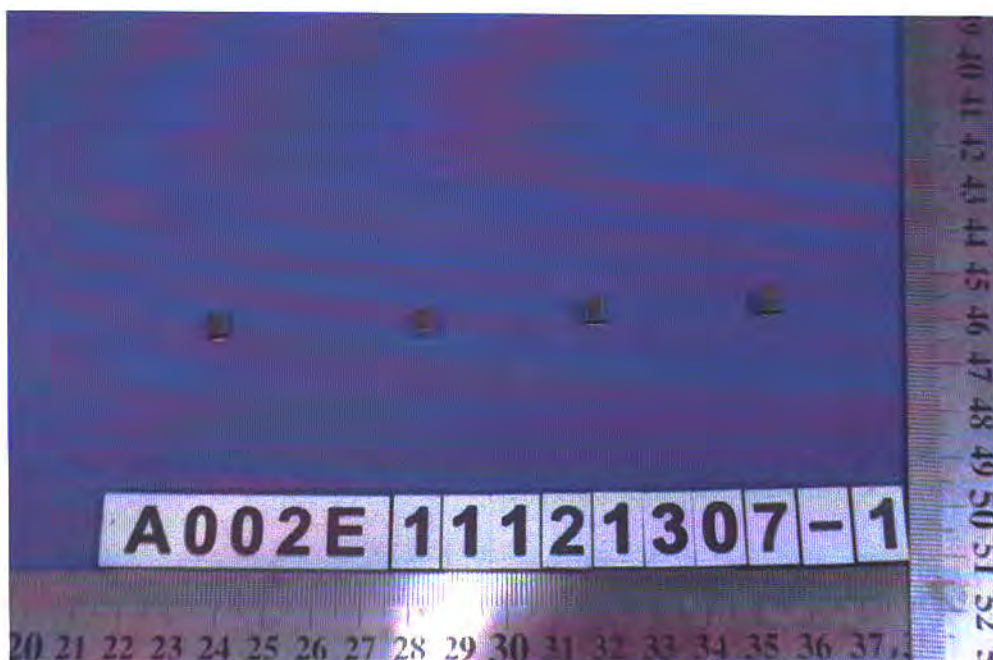
Date: Dec.15, 2011

Page 4 of 4

## Note:

- The new RoHS directive 2011/65/EU, on Jul. 21, 2011 come into force, on Jan. 03, 2013 the formal implementation, Directive 2002/95/EC shall be repealed simultaneously.
- Specimens, which requested to determine Lead, Cadmium and Mercury Content, have been dissolved completely.
- mg/kg=ppm
- N.D.=not detected(<MQL)
- MQL=Method Quantitation Limit
- Negative=Absence of Cr (VI);  
Positive=Presence of Cr (VI);  
Uncertain= can not verify whether the sample have Hexavalent Chromium by spot-test.  
(The tested sample should be further verified by boiling-water-extraction method if the spot test result is uncertain or negative.)
- \*The test is based on the following assumption: The sample plating is a single layer and each part is uniform. The test result maybe cannot stand for the physical truth of sample plating.
- Photo is included

## Photograph of Sample



Copper shell

\*\*\*End of Report\*\*\*



**Test Report**

NO.: W02032011404D

Date: 2012.02.07

Page 1 of 4

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

Sample Name: Zn ALLOY

Manufacturer:

Testing Part Description: MIX TESTED

Sample Received Date: 2012.02.03

Test Period: 2012.02.03 To 2012.02.07

Test Requested: In accordance with the RoHS Directive 2011/65/EU Annex II

Test Method: With reference to IEC62321 Edition 1.0 :2008 method: Regulated Substances  
Content of test process with Electrical & Electronic Products

- (1) Lead Analysis is performed by AAS
- (2) Cadmium Analysis is performed by AAS
- (3) Mercury Analysis is performed by ICP-OES
- (4) Hexavalent Chromium Analysis is performed By Spot-test/Boiling-water-extraction Method
- (5) PBBs and PBDEs Analysis is performed by GC-MS

Test Result: Please refer to next page(s)

Approved by:

*zhang daqin*

Code: i43lblmq

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## Test Report

NO.: W02032011404D

Date: 2012.02.07

Page 2 of 4

Test Result (Unit: mg/kg)

Test Item	MDL	Test Result	RoHS Limit
Lead (Pb)	1	N.D.	1000
Cadmium (Cd)	1	N.D.	100
Mercury (Hg)	1	N.D.	1000
Hexavalent Chromium (Cr <sup>6+</sup> )	See Note (6)	Negative	—
PBBs	—	—	1000
Bromobiphenyl	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.	—
PBDEs	—	—	1000
Bromodiphenyl ether	5	N.D.	—
Dibromodiphenyl ether	5	N.D.	—
Tribromodiphenyl ether	5	N.D.	—
Tetrabromodiphenyl ether	5	N.D.	—
Pentabromodiphenyl ether	5	N.D.	—
Hexabromodiphenyl ether	5	N.D.	—
Heptabromodiphenyl ether	5	N.D.	—
Octabromodiphenyl ether	5	N.D.	—
Nonabromodiphenyl ether	5	N.D.	—
Decabromodiphenyl ether	5	N.D.	—

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**Test Report**

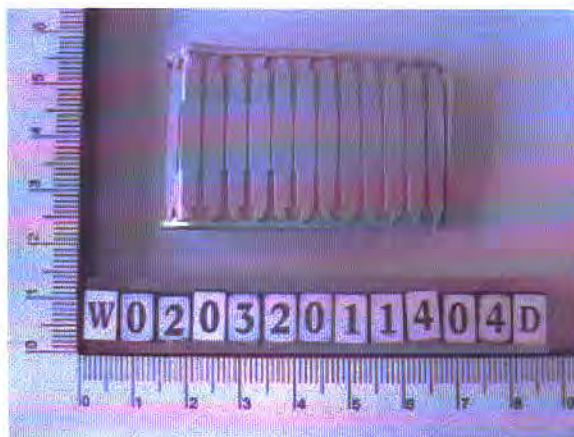
NO.: W02032011404D

Date: 2012.02.07

Page 3 of 4

- Note:
- (1) mg/kg = ppm
  - (2) "—" = Does not stipulate
  - (3) N.D. = Not Detected (<MDL)
  - (4) MDL = Method Detection Limit
  - (5) The most allowable limit value reference to RoHS Directive 2011/65/EU Annex II
  - (6) Spot-test:
    - Negative = Not Detected 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 cannot be confirmed or negative)
    - Boiling-water-extraction:
      - Negative = Not Detected 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 50cm<sup>2</sup> sample surface area used.
  - (7) The mixing sample test was performed as client's request. Result obtained only gives informality value and does not represent individual sample material.

Photo:



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# Test Report

NO.: W02032011404D

Date: 2012.02.07

Page 4 of 4

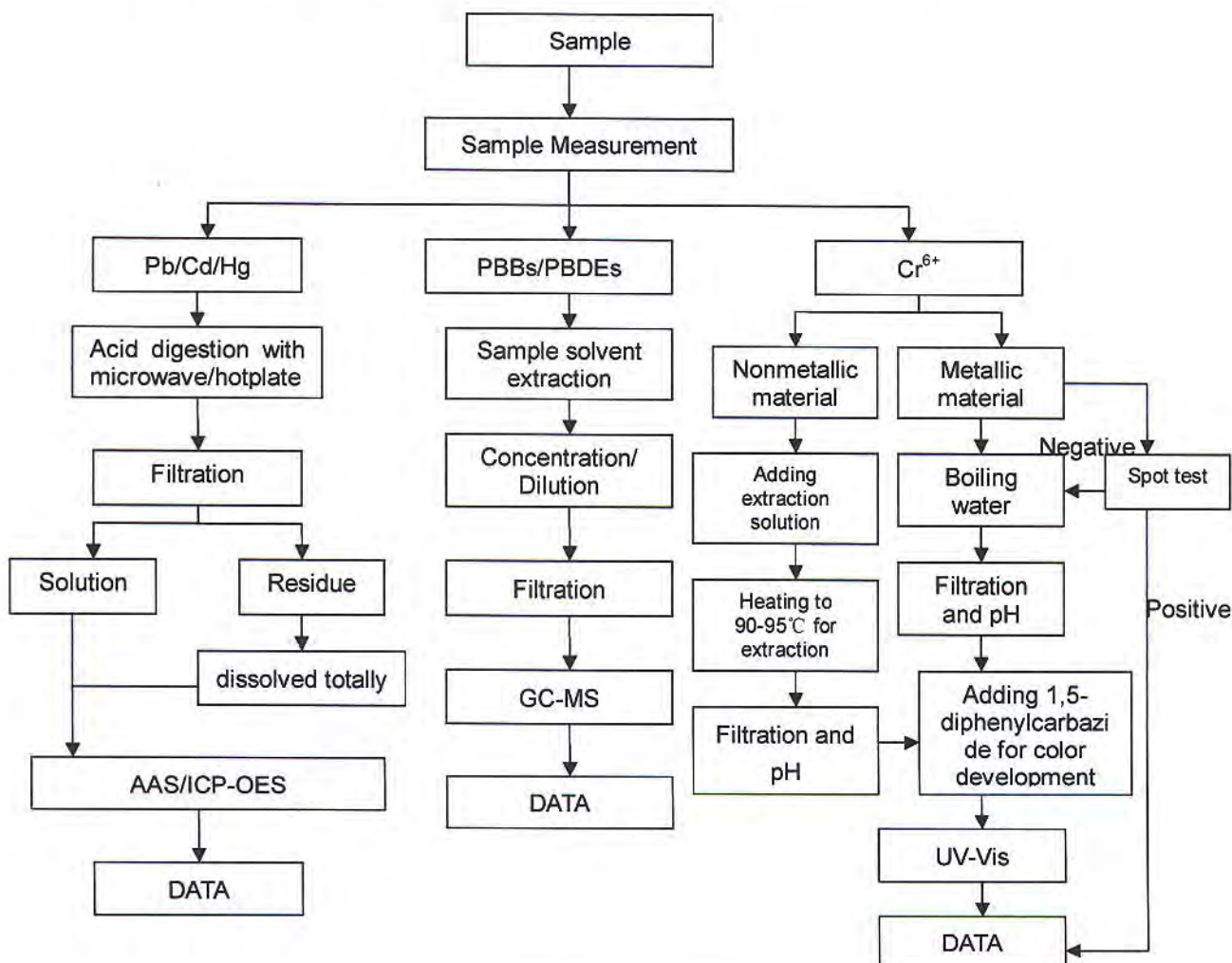
## Measurement Flow-chart

Tested by: XuYing

Checked by: Walter

Person in charge of the lab: Zhangdaiqin

These Samples Were Dissolved Totally By Pre-conditioning Method According To Below Flow Chart. (Cr<sup>6+</sup> And PBBs/PBDEs Test Method Excluded)



\*\*\*End of Report\*\*\*

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## Test Report

NO.: W02032011204D

Date: 2012.02.07

Page 1 of 4

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

Sample Name: BRASS

Manufacturer:

Sample Description: SOLDER COATING ON Cu

Testing Part Description: MIX TESTED

Sample Received Date: 2012.02.03

Test Period: 2012.02.03 To 2012.02.07

Test Requested: In accordance with the RoHS Directive 2011/65/EU Annex II

Test Method: With reference to IEC62321 Edition 1.0 :2008 method: Regulated Substances  
Content of test process with Electrical & Electronic Products

- (1) Lead Analysis is performed by AAS
- (2) Cadmium Analysis is performed by AAS
- (3) Mercury Analysis is performed by ICP-OES
- (4) Hexavalent Chromium Analysis is performed By Spot-test/Boiling-water-extraction Method
- (5) PBBs and PBDEs Analysis is performed by GC-MS

Test Result: Please refer to next page(s)

Approved by:

*zhang daoping*

Code: e5ptm0y6

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## Test Report

NO.: W02032011204D

Date: 2012.02.07

Page 2 of 4

Test Result (Unit: mg/kg)

Test Item	MDL	Test Result	RoHS Limit
Lead (Pb)	1	N.D.	1000
Cadmium (Cd)	1	N.D.	100
Mercury (Hg)	1	N.D.	1000
Hexavalent Chromium (Cr <sup>6+</sup> )	See Note (6)	Negative	—
PBBs	—	—	1000
Bromobiphenyl	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.	—
PBDEs	—	—	1000
Bromodiphenyl ether	5	N.D.	—
Dibromodiphenyl ether	5	N.D.	—
Tribromodiphenyl ether	5	N.D.	—
Tetrabromodiphenyl ether	5	N.D.	—
Pentabromodiphenyl ether	5	N.D.	—
Hexabromodiphenyl ether	5	N.D.	—
Heptabromodiphenyl ether	5	N.D.	—
Octabromodiphenyl ether	5	N.D.	—
Nonabromodiphenyl ether	5	N.D.	—
Decabromodiphenyl ether	5	N.D.	—

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## Test Report

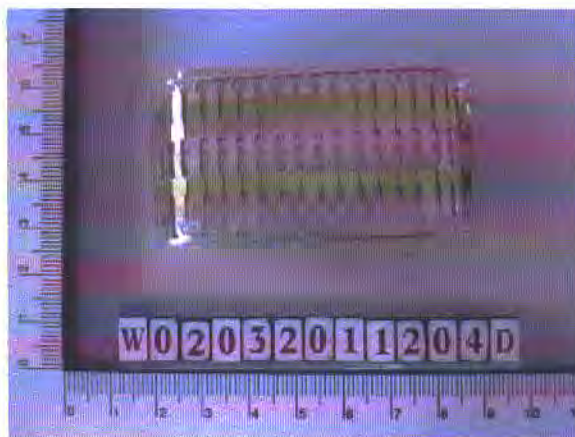
NO.: W02032011204D

Date: 2012.02.07

Page 3 of 4

- Note:
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  - (2) "—" = Does not stipulate
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  - (4) MDL = Method Detection Limit
  - (5) The most allowable limit value reference to RoHS Directive 2011/65/EU Annex II
  - (6) Spot-test:
    - Negative = Not Detected 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 cannot be confirmed or negative)
    - Boiling-water-extraction:
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  - (7) The mixing sample test was performed as client's request. Result obtained only gives informality value and does not represent individual sample material.

Photo:



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## Test Report

NO.: W02032011204D

Date: 2012.02.07

Page 4 of 4

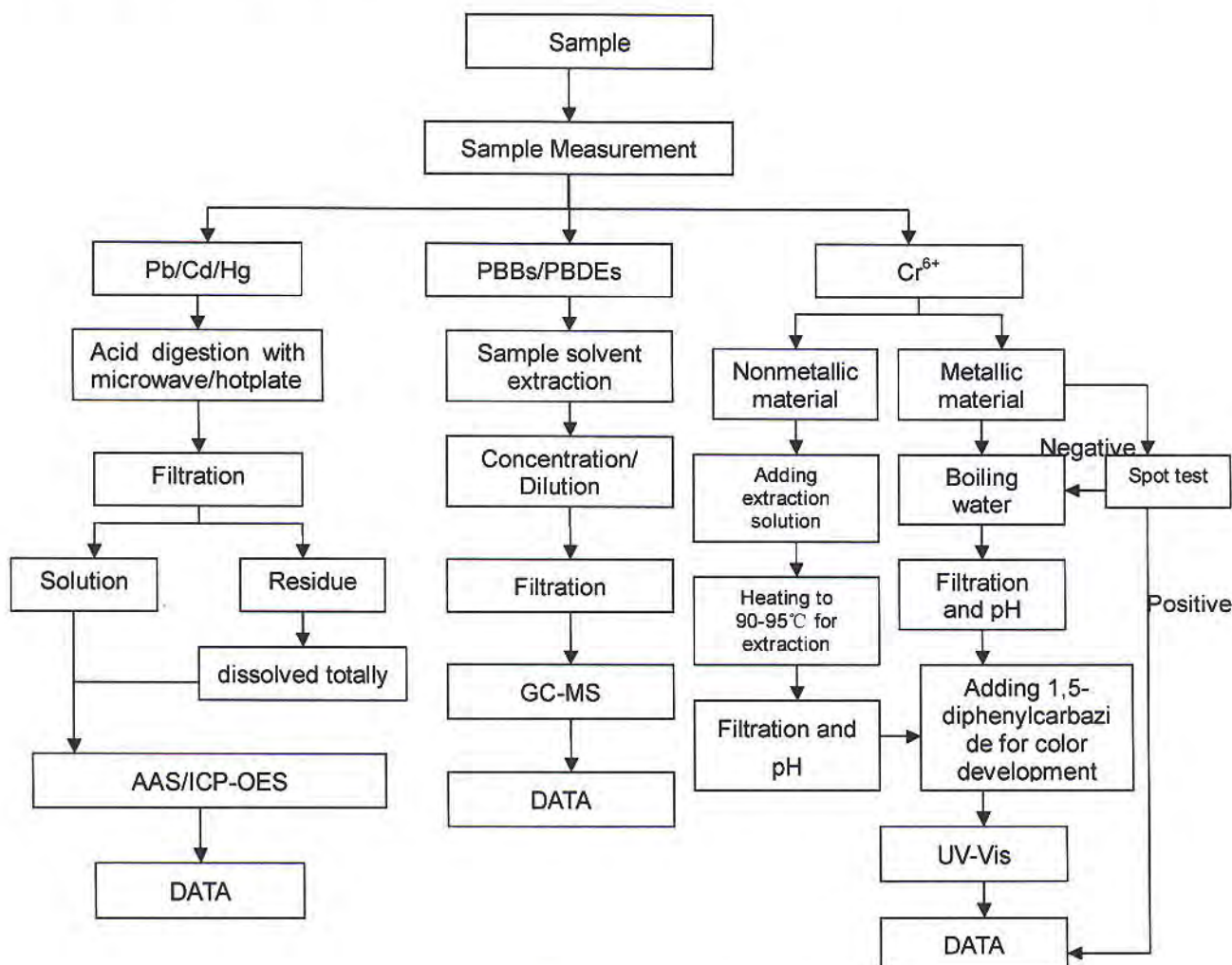
### Measurement Flow-chart

Tested by: XuYing

Checked by: Walter

Person in charge of the lab: Zhangdaiqin

These Samples Were Dissolved Totally By Pre-conditioning Method According To Below Flow Chart. (Cr<sup>6+</sup> And PBBs/PBDEs Test Method Excluded)



\*\*\*End of Report\*\*\*

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# TEST REPORT

NO.: A002E11121307-2R02

Date: Dec.15, 2011

Page 1 of 4

**Customer:** SuZhou FuHong Electronic Industrial Co., Ltd.

**Address:** NO. 89 WEI DU ROAD, WANGTING TOWN, XIANGCHENG DISTRICT, SUZHOU, CHINA

**Report on the submitted sample said to be**

**Sample name:** Fuses copper shell

**Model:** /

**Item/Lot No.:** /

**Material:** /

**Description:** /

**Buyer:** /

**Supplier:** /

**Manufacturer:** /

**Sample received date:** Dec.13,2011

**Testing period:** From Dec.13,2011 to Dec.15,2011

## Testing Requested

As specified by client, to determine the Lead, Cadmium, Mercury & Hexavalent Chromium content in the submitted sample in accordance with Directive 2002/95/EC (RoHS).

## Testing method:

Testing Item	Pretreatment method	Measuring instrument	MQL
Lead (Pb)	IEC 62321: 2008, section 9	ICP-OES	2mg/kg
Cadmium (Cd)	IEC 62321: 2008, section 9	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321: 2008, section 7	ICP-OES	2 mg/kg
Chromium (Cr VI)	IEC 62321: 2008, Annex B	UV-VIS	0.02mg/kg*

## Note:

-\* 0.02 mg/kg refers to the MQL of sample extraction liquid.

## Conclusion:

-When tested as specified the submitted sample complied with the requirements of commission Decision of 18 Aug 2005 amending Directive 2002/95/EC notified under document 2005/618/EC.

\*\*\*\*\*FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)\*\*\*\*\*

Project Leader  
(Engineer)

Maggie

Approved by  
(Lab manager)

Wickay

Inspected by

(Technical manager)

Weikin

SHENZHEN AOV TESTING TECHNOLOGY CO.,LTD.KUNSHAN BRANCH

No.8,Minguan Road North,Zhoushi,Kunshan,Jiangsu,China

Fax : 86-512-5510 8808 Http: //www.aovt.com

(Attention is drawn to the terms and conditions printed overleaf)



Hotline

86-512-5510 8000

# TEST REPORT

NO.: A002E11121307-2R02

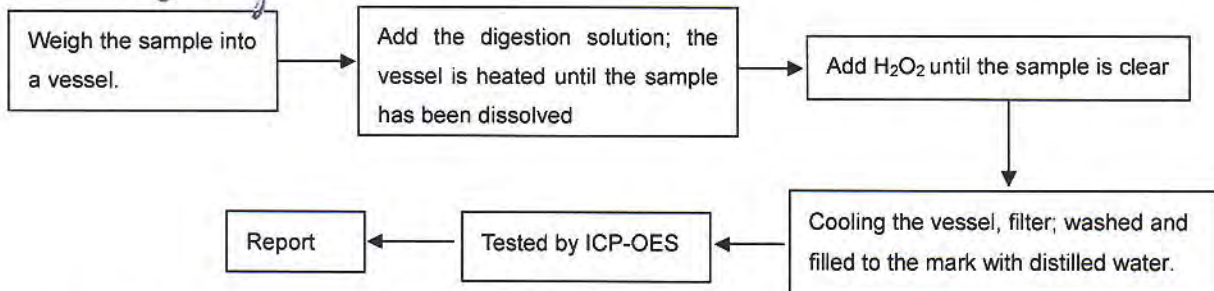
Date: Dec.15, 2011

Page 2 of 4

## Test Flow:

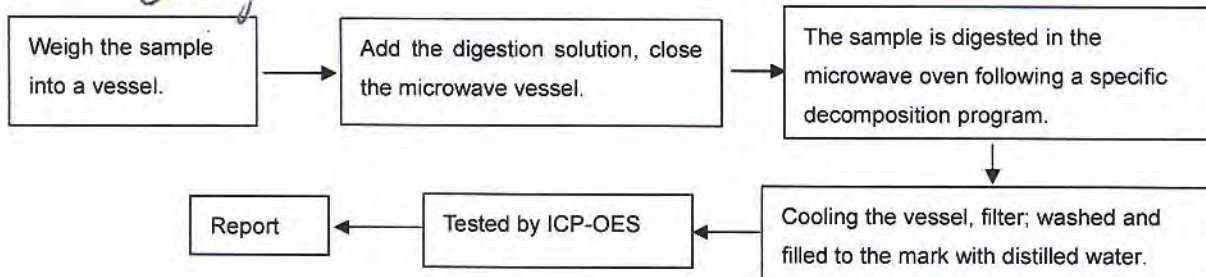
### 1. To Determine Lead, Cadmium Content: (Metal substrate)

Tested by: *Condy*



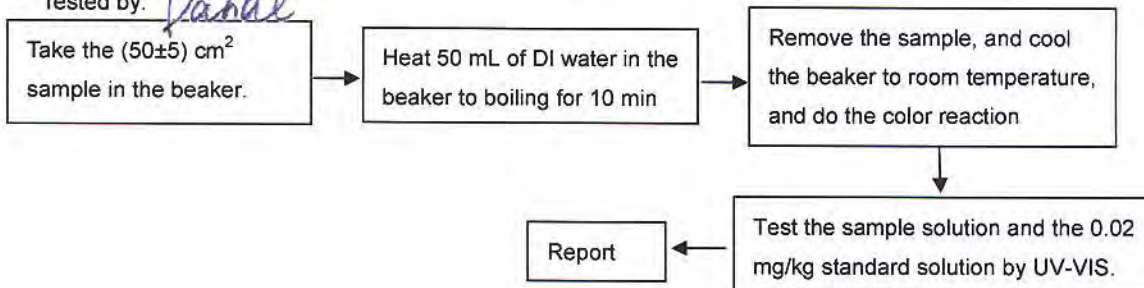
### 2. To Determine Mercury Content: (Metal substrate)

Tested by: *Condy*



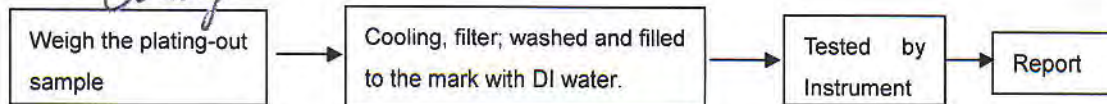
### 3. To Determine Hexavalent Chromium Content (boiling- water- extraction): (Metal substrate)

Tested by: *Danae*



### 4. To Determine Lead, Cadmium and Mercury Content: (Plating)

Tested by: *Condy*



# TEST REPORT

NO.: A002E11121307-2R02

Date: Dec.15, 2011

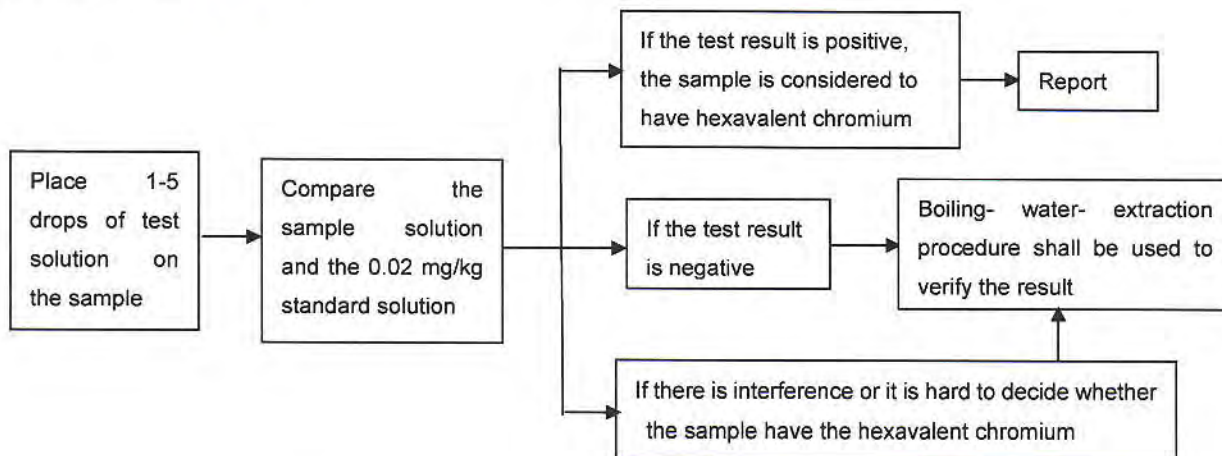
Page 3 of 4

5. To Determine Hexavalent Chromium Content in colorless and colored chromate coating on metals: (Plating)

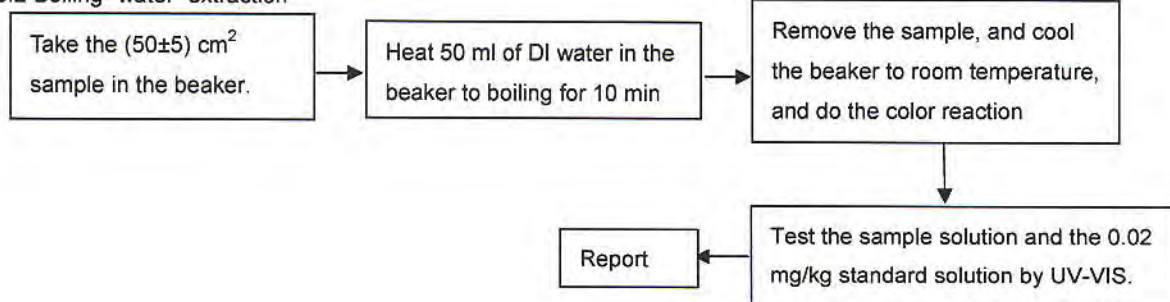
Tested by:

*Danai*

5.1 Spot-test



5.2 Boiling- water- extraction



## Sample description:

Code	Sample name	Code	Sample name
2-1	Lead wire substrate	2-3	Copper shell substrate
2-2	Lead wire Plating	2-4	Copper shell Plating

## Test Results:

Item	Unit	RoHS Limit	Result			
			2-1	2-2*	2-3	2-4*
Lead (Pb)	mg/kg	1000	N.D.	2.5	40.0	N.D.
Cadmium (Cd)	mg/kg	100	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	mg/kg	1000	N.D.	N.D.	N.D.	N.D.
Chromium (CrVI)	mg/kg	1000	Negative	Negative	Negative	Negative

# TEST REPORT

NO.: A002E11121307-2R02

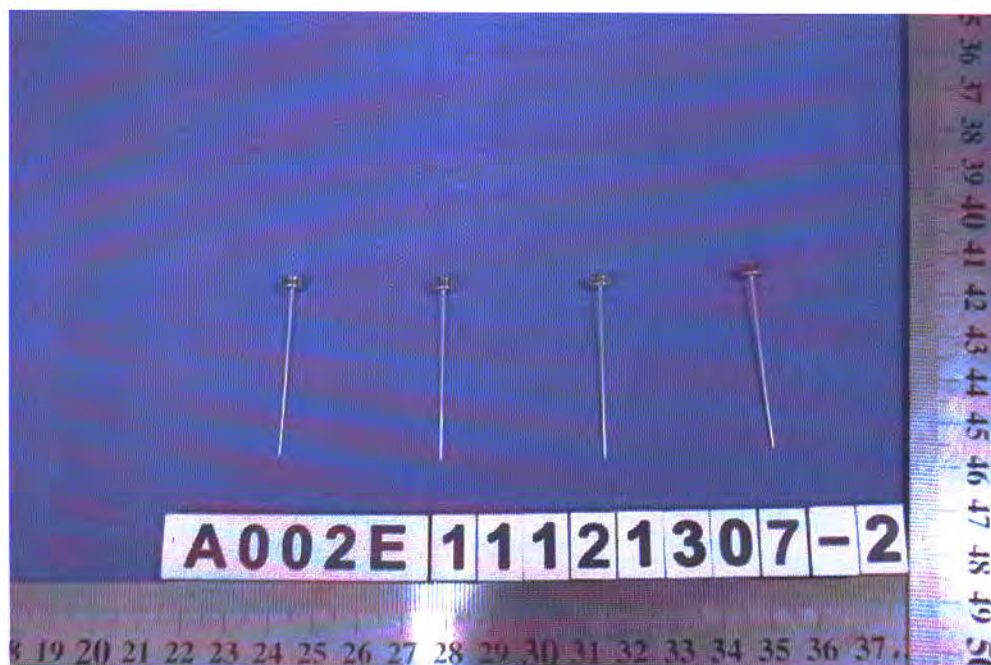
Date: Dec.15, 2011

Page 4 of 4

## Note:

- The new RoHS directive 2011/65/EU, on Jul. 21, 2011 come into force, on Jan. 03, 2013 the formal implementation, Directive 2002/95/EC shall be repealed simultaneously.
- Specimens, which requested to determine Lead, Cadmium and Mercury Content, have been dissolved completely.
- mg/kg=ppm
- N.D.=not detected(<MQL)
- MQL=Method Quantitation Limit
- Negative=Absence of Cr (VI);
- Positive=Presence of Cr (VI);
- Uncertain= can not verify whether the sample have Hexavalent Chromium by spot-test.
- (The tested sample should be further verified by boiling-water-extraction method if the spot test result is uncertain or negative.)
- \*The test is based on the following assumption: The sample plating is a single layer and each part is uniform. The test result maybe cannot stand for the physical truth of sample plating.
- Photo is included

## Photograph of Sample



Fuses copper shell

\*\*\*End of Report\*\*\*

# 測試報告 Test Report

號碼(No.) : CE/2012/14843 日期(Date) : 2012/02/04 頁數(Page) : 1 of 32

功得電子工業股份有限公司

CONQUER ELECTRONICS CO., LTD.

新北市五股區五權五路26號

NO. 26 WUCYUAN 5TH ROAD, WUGU DISTRICT, NEW TAIPEI CITY 248, TAIWAN



以下測試樣品係由客戶送樣，且由客戶聲稱並經客戶確認如下 (The following samples was/were submitted and identified by/on behalf of the client as) :

樣品名稱(Sample Description) : CERAMIC  
樣品型號(Style/Item No.) : C610  
收件日期(Sample Receiving Date) : 2012/01/30  
測試期間(Testing Period) : 2012/01/30 TO 2012/02/04

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).

結論(Conclusion) : 根據客戶所提供的樣品，其鎘、鉛、汞、六價鉻、多溴聯苯及多溴聯苯醚的測試結果符合 RoHS指令2002/95/EC的更新指令2011/65/EU之要求 (Based on the performed tests on submitted samples, the test results of Cadmium, Lead, Mercury, Hexavalent Chromium Cr(VI), PBBs and PBDEs comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.)

  
Chenyu Kung / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory – Taipei

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## 測試報告 Test Report

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功得電子工業股份有限公司

CONQUER ELECTRONICS CO., LTD.

新北市五股區五權五路26號

NO. 26 WUCYUAN 5TH ROAD, WUGU DISTRICT, NEW TAIPEI CITY 248, TAIWAN



### 測試結果(Test Results)

測試部位(PART NAME)No.1 : 白色陶瓷 (WHITE CERAMIC)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測。 / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.	100
鉛 / Lead (Pb)	mg/kg	參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測。 / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	178	1000
汞 / Mercury (Hg)	mg/kg	參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測。 / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.	1000
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考IEC 62321: 2008方法, 以UV-VIS檢測。 / With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.	1000
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	參考US EPA 3540C: 1996方法, 以液相層析 / 質譜儀檢測全氟辛烷磺酸含量。 / With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS.	10	n.d.	-
全氟辛酸 (銨) / PFOA (CAS No.: 335-67-1)	mg/kg	參考US EPA 3540C: 1996方法, 以液相層析 / 質譜儀檢測全氟辛酸 (銨) 含量。 / With reference to US EPA 3540C: 1996 method for PFOA Content. Analysis was performed by LC/MS.	10	n.d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
多氯聯苯 / Polychlorinated Biphenyls (PCBs) (CAS No.: 1336-36-3)	mg/kg	參考US EPA 3540C方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.	-
多氯三聯苯 / Polychlorinated Terphenyls (PCTs)	mg/kg	參考US EPA 3540C方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.	-
多氯奈 / Polychlorinated Naphthalene (PCNs)	mg/kg	參考US EPA 3540C方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	5	n.d.	-
短鏈氯化石蠟 / Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (CAS No.: 85535-84-8)	%	參考US EPA 3540C方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.01	n.d.	-
甲醛 / Formaldehyde (CAS No.: 50-00-0)	mg/kg	參考ISO 17226-1(2008)方法, 以高效液相層析儀/二極體陣列偵測器檢測。 / With reference to ISO 17226-1(2008). Analysis was performed by HPLC/DAD.	3	n.d.	-
聚氯乙烯 / PVC	**	以紅外光譜分析及焰色法檢測。 / Analysis was performed by FTIR and FLAME Test.	-	Negative	-
鄰苯二甲酸甲苯基丁酯 / BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	參考EN 14372, 以氣相層析/質譜儀檢測之。 / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	-
鄰苯二甲酸二(2-乙基己基)酯 / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	參考EN 14372, 以氣相層析/質譜儀檢測之。 / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	-
鄰苯二甲酸二異癸酯 / DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0)	%	參考EN 14372, 以氣相層析/質譜儀檢測之。 / With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.	-

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## 測試報告

## Test Report

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0)	%	參考EN 14372, 以氣相層析/質譜儀檢測之。 / With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.	-
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	%	參考EN 14372, 以氣相層析/質譜儀檢測之。 / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	-
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	參考EN 14372, 以氣相層析/質譜儀檢測之。 / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	-
單甲基二溴二苯基甲烷 / Monomethyl dibromodiphenyl methane (DBBT)	mg/kg	參考US EPA 8270D方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 8270D method. Analysis was performed by GC/MS.	0.5	n.d.	-
單甲基二氯二苯基甲烷 / Monomethyl dichlorodiphenyl methane (Ugilecl21)	mg/kg	參考US EPA 8270D方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 8270D method. Analysis was performed by GC/MS.	0.5	n.d.	-
單甲基四氯二苯基甲烷 / Monomethyl tetrachlorodiphenyl methane (Ugilecl41)	mg/kg	參考US EPA 8270D方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 8270D method. Analysis was performed by GC/MS.	0.5	n.d.	-
有機錫 / Organic-tin compounds					
三丁基錫 / Tributyl Tin (TBT)	mg/kg	參考DIN 38407-13方法, 以氣相層析儀/火焰光度偵測器檢測。 / With reference to DIN 38407-13. Analysis was performed by GC/FPD.	0.03	n.d.	-
三苯基錫 / Triphenyl Tin (TphT)	mg/kg	參考DIN 38407-13方法, 以氣相層析儀/火焰光度偵測器檢測。 / With reference to DIN 38407-13. Analysis was performed by GC/FPD.	0.03	n.d.	-

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# 測試報告

## Test Report

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				No.1	
海龍 (Halons)					
海龍 (Halon)-1211 (CAS No.: 353-59-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
海龍 (Halon)-1301 (CAS No.: 75-63-8)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
海龍 (Halon)-2402 (CAS No.: 124-73-2)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
鹵素 / Halogen					
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	參考BS EN 14582:2007, 以離子層析儀分析。 / With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.	-
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg	參考BS EN 14582:2007, 以離子層析儀分析。 / With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.	-
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	參考BS EN 14582:2007, 以離子層析儀分析。 / With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.	-
鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg	參考BS EN 14582:2007, 以離子層析儀分析。 / With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.	-

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				No.1	
石棉 / Asbestos					
陽起石 / Actinolite (CAS No.: 77536-66-4)	%	參考EPA 600/R-93/116 / 立體顯微鏡 (SM), 偏光顯微鏡 (PLM)及X光繞射定性分析法 (XRD) / With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD.	1	Negative	-
棕石棉 / Amosite (CAS No.: 12172-73-5)	%	參考EPA 600/R-93/116 / 立體顯微鏡 (SM), 偏光顯微鏡 (PLM)及X光繞射定性分析法 (XRD) / With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD.	1	Negative	-
斜方角閃石 / Anthophyllite (CAS No.: 77536-67-5)	%	參考EPA 600/R-93/116 / 立體顯微鏡 (SM), 偏光顯微鏡 (PLM)及X光繞射定性分析法 (XRD) / With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD.	1	Negative	-
白石棉 / Chrysotile (CAS No.: 12001-29-5)	%	參考EPA 600/R-93/116 / 立體顯微鏡 (SM), 偏光顯微鏡 (PLM)及X光繞射定性分析法 (XRD) / With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD.	1	Negative	-
青石棉 / Crocidolite (CAS No.: 12001-28-4)	%	參考EPA 600/R-93/116 / 立體顯微鏡 (SM), 偏光顯微鏡 (PLM)及X光繞射定性分析法 (XRD) / With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD.	1	Negative	-
透閃石 / Tremolite (CAS No.: 77536-68-6)	%	參考EPA 600/R-93/116 / 立體顯微鏡 (SM), 偏光顯微鏡 (PLM)及X光繞射定性分析法 (XRD) / With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD.	1	Negative	-

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多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321: 2008方法, 以氣相層析儀/ 質譜儀檢測。 / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.	1000
一溴聯苯 / Monobromobiphenyl			5	n.d.	-
二溴聯苯 / Dibromobiphenyl			5	n.d.	-
三溴聯苯 / Tribromobiphenyl			5	n.d.	-
四溴聯苯 / Tetrabromobiphenyl			5	n.d.	-
五溴聯苯 / Pentabromobiphenyl			5	n.d.	-
六溴聯苯 / Hexabromobiphenyl			5	n.d.	-
七溴聯苯 / Heptabromobiphenyl			5	n.d.	-
八溴聯苯 / Octabromobiphenyl			5	n.d.	-
九溴聯苯 / Nonabromobiphenyl			5	n.d.	-
十溴聯苯 / Decabromobiphenyl			5	n.d.	-
多溴聯苯醚總和 / Sum of PBDEs			-	n.d.	1000
一溴聯苯醚 / Monobromodiphenyl ether			5	n.d.	-
二溴聯苯醚 / Dibromodiphenyl ether			5	n.d.	-
三溴聯苯醚 / Tribromodiphenyl ether			5	n.d.	-
四溴聯苯醚 / Tetrabromodiphenyl ether			5	n.d.	-
五溴聯苯醚 / Pentabromodiphenyl ether			5	n.d.	-
六溴聯苯醚 / Hexabromodiphenyl ether			5	n.d.	-
七溴聯苯醚 / Heptabromodiphenyl ether			5	n.d.	-
八溴聯苯醚 / Octabromodiphenyl ether			5	n.d.	-
九溴聯苯醚 / Nonabromodiphenyl ether			5	n.d.	-
十溴聯苯醚 / Decabromodiphenyl ether			5	n.d.	-
偶氮 (AZO)					
1): 4-氨基二苯 / 4-AMINODIPHENYL (CAS No.: 92-67-1)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜 儀檢測。 / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-

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## 測試報告

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功得電子工業股份有限公司

CONQUER ELECTRONICS CO., LTD.

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NO. 26 WUCYUAN 5TH ROAD, WUGU DISTRICT, NEW TAIPEI CITY 248, TAIWAN



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

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# 測試報告

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功得電子工業股份有限公司

CONQUER ELECTRONICS CO., LTD.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
10): 3,3'-二氯聯苯胺 / 3,3'-DICHLOROBENZIDINE (CAS No.: 91-94-1)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
11): 3,3'-二甲氧基聯苯胺 / 3,3'-DIMETHOXYBENZIDINE (CAS No.: 119-90-4)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
12): 3,3'-二甲基聯苯胺 / 3,3'-DIMETHYLBENZIDINE (CAS No.: 119-93-7)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
13): 3,3'-二甲基-4,4'-二氨基二苯甲烷 / 3,3'-DIMETHYL-4,4'-DIAMINODIPHENYLMETHANE (CAS No.: 838-88-0)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
14): 2-甲氧基-5-甲基聯苯 / P-CRESIDINE (2-METHOXY-5-METHYLANILINE) (CAS No.: 120-71-8)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
15): 4,4'-亞甲基雙(氣苯胺) / 4,4'-METHYLENE-BIS-(2-CHLOROANILINE) (CAS No.: 101-14-4)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
16): 4,4'-氧化雙苯胺 / 4,4'-OXYDIANILINE (CAS No.: 101-80-4)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
17): 4,4'-硫代雙苯胺 / 4,4'-THIODIANILINE (CAS No.: 139-65-1)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測。 / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-

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## 測試報告

## Test Report

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功得電子工業股份有限公司

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
18): 鄰甲苯胺 / O-TOLUIDINE (CAS No.: 95-53-4)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
19): 2,4-二氨基甲苯 / 2,4-TOLUYLENEDIAMINE (CAS No.: 95-80-7)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
20): 2,4,5-三甲基苯胺 / 2,4,5-TRIMETHYLANILINE (CAS No.: 137-17-7)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
21): 鄰位甲氧基苯胺 / O-ANISIDINE (CAS No.: 90-04-0)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
22): 對氨基偶氮苯 / P-AMINOAZOBENZENE (CAS No.: 60-09-3)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
23): 2,4-二甲基苯胺 / 2,4-XYLIDINE (CAS No.: 95-68-1)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-
24): 2,6-二甲基苯胺 / 2,6-XYLIDINE (CAS No.: 87-62-7)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	-

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功得電子工業股份有限公司

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
氟氯碳化物 / CFCs (Chlorofluorocarbons)					
Group I					
氟氯碳化物 (Chlorofluorocarbon)- 11 (CAS No.: 75-69-4)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯碳化物 (Chlorofluorocarbon)- 12 (CAS No.: 75-71-8)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯碳化物 (Chlorofluorocarbon)- 113 (CAS No.: 76-13-1)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯碳化物 (Chlorofluorocarbon)- 114 (CAS No.: 76-14-2)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯碳化物 (Chlorofluorocarbon)- 115 (CAS No.: 76-15-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
Group III					
氟氯碳化物 (Chlorofluorocarbon)- 13 (CAS No.: 75-72-9)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯碳化物 (Chlorofluorocarbon)- 111 (CAS No.: 354-56-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-

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功得電子工業股份有限公司

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
氯氣碳化物 (Chlorofluorocarbon)- 112 (CAS No.: 76-12-0)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氯氣碳化物 (Chlorofluorocarbon)- 211 (CAS No.: 422-78-6)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氯氣碳化物 (Chlorofluorocarbon)- 212 (CAS No.: 3182-26-1)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氯氣碳化物 (Chlorofluorocarbon)- 213 (CAS No.: 2354-06-5)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氯氣碳化物 (Chlorofluorocarbon)- 214 (CAS No.: 29255-31-0)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氯氣碳化物 (Chlorofluorocarbon)- 215 (CAS No.: 4259-43-2)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氯氣碳化物 (Chlorofluorocarbon)- 216 (CAS No.: 661-97-2)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氯氣碳化物 (Chlorofluorocarbon)- 217 (CAS No.: 422-86-6)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-

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				No.1	
氯化碳氫化物 / CHCs (Chlorinate hydrocarbon)					
1,1,1,2-四氯乙烷 / 1,1,1,2-Tetrachloroethane (CAS No.: 630-20-6)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
1,1,1-三氯乙烷 / 1,1,1-Trichloroethane (CAS No.: 71-55-6)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
1,1,2,2-四氯乙烷 / 1,1,2,2-Tetrachloroethane (CAS No.: 79-34-5)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
1,1,2-三氯乙烷 / 1,1,2-Trichloroethane (CAS No.: 79-00-5)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
1,1-二氯乙烷 / 1,1-Dichloroethane (CAS No.: 75-34-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
1,1-二氯乙烯 / 1,1-Dichloroethene (CAS No.: 75-35-4)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
1,1-二氯丙烯 / 1,1-Dichloropropene (CAS No.: 563-58-6)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-

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功得電子工業股份有限公司

CONQUER ELECTRONICS CO., LTD.

新北市五股區五權五路26號

NO. 26 WUCYUAN 5TH ROAD, WUGU DISTRICT, NEW TAIPEI CITY 248, TAIWAN



測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
1,2,3-三氯丙烷 / 1,2,3-Trichloropropane (CAS No.: 96-18-4)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
1,2-二氯乙烷 / 1,2-Dichloroethane (CAS No.: 107-06-2)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
1,2-二氯丙烷 / 1,2-Dichloropropane (CAS No.: 78-87-5)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
1,3-二氯丙烷 / 1,3-Dichloropropane (CAS No.: 142-28-9)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
2,2-二氯丙烷 / 2,2-Dichloropropane (CAS No.: 594-20-7)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
四氯甲烷 (四氯化碳) / Carbon tetrachloride (CAS No.: 56-23-5)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氯乙烷 / Chloroethane (CAS No.: 75-00-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氯仿 / Chloroform (CAS No.: 67-66-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-

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## 測試報告

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功得電子工業股份有限公司

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
氯甲烷 / Chloromethane (CAS No.: 74-87-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
順-1,2-二氯乙烯 / cis-1,2-Dichloroethene (CAS No.: 156-59-2)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
順-1,3-二氯丙烯 / cis-1,3-Dichloropropene (CAS No.: 10061-01-5)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
六氯丁二烯 / Hexachlorobutadiene (CAS No.: 87-68-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
二氯甲烷 / Dichloromethane (CAS No.: 75-09-2)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
四氯乙烯 / Tetrachloroethene (CAS No.: 127-18-4)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
反-1,2-二氯乙烯 / trans-1,2-Dichloroethene (CAS No.: 156-60-5)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
反-1,3-二氯丙烯 / trans-1,3-Dichloropropene (CAS No.: 10061-02-6)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-

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功得電子工業股份有限公司

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				No.1	
三氯乙烯 / Trichloroethylene (CAS No.: 79-01-6)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 / HCFCs (Hydrochlorofluorocarbons)					
氟氯氫碳化物 (HCFC)-21 (CAS No.: 75-43-4)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-22 (CAS No.: 75-45-6)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-31 (CAS No.: 593-70-4)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-121 (CAS No.: 354-14-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-122 (CAS No.: 354-21-2)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-123 (CAS No.: 306-83-2)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-

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				No.1	
氟氯氫碳化物 (HCFC)-124 (CAS No.: 2837-89-0)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-131 (CAS No.: 359-28-4)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-132b (CAS No.: 1649-08-7)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-133a (CAS No.: 75-88-7)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-141b (CAS No.: 1717-00-6)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-142b (CAS No.: 75-68-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-221 (CAS No.: 422-26-4)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-

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				No.1	
氟氯氫碳化物 (HCFC)-222 (CAS No.: 422-49-1)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-223 (CAS No.: 422-52-6)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-224 (CAS No.: 422-54-8)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-225ca (CAS No.: 422-56-0)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-225cb (CAS No.: 507-55-1)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-226 (CAS No.: 431-87-8)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-231 (CAS No.: 421-94-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-

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				No.1	
氟氯氫碳化物 (HCFC)-232 (CAS No.: 460-89-9)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-233 (CAS No.: 7125-84-0)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-234 (CAS No.: 425-94-5)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-235 (CAS No.: 460-92-4)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-241 (CAS No.: 666-27-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-242 (CAS No.: 460-63-9)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-243 (CAS No.: 460-69-5)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-

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# 測試報告

## Test Report

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功得電子工業股份有限公司

CONQUER ELECTRONICS CO., LTD.

新北市五股區五權五路26號

NO. 26 WUCYUAN 5TH ROAD, WUGU DISTRICT, NEW TAIPEI CITY 248, TAIWAN



測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
氟氯氫碳化物 (HCFC)-244	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-251 (CAS No.: 421-41-0)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-252 (CAS No.: 819-00-1)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-253 (CAS No.: 460-35-5)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-261 (CAS No.: 420-97-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-262 (CAS No.: 421-02-03)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-
氟氯氫碳化物 (HCFC)-271 (CAS No.: 430-55-7)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀 檢測。 / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.	-

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### 備註(Note) :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. "-" = Not Regulated (無規格值)
5. \*\* = Qualitative analysis (No Unit) 定性分析(無單位)
6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
7. 石棉(Asbestos) : Negative = 陰性 (< 1.0 %), Positive = 陽性 (> 1.0 %)

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

PFOS濃度在物質或製備中不得超過0.001%(10ppm), 在半成品、成品或零部件中不得超過0.1%(1000ppm), 在紡織品或塗層材料中不得超過1µg/m<sup>2</sup>。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1µg/m<sup>2</sup>.)

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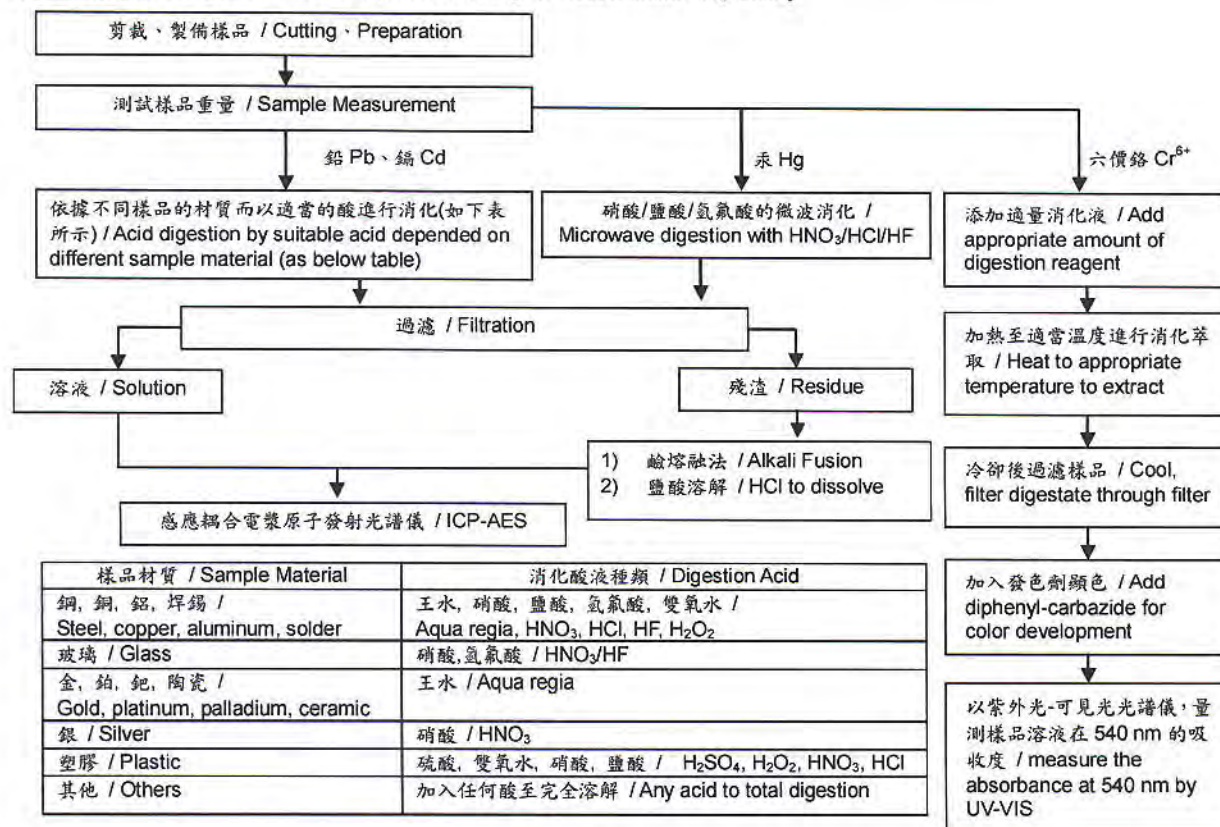
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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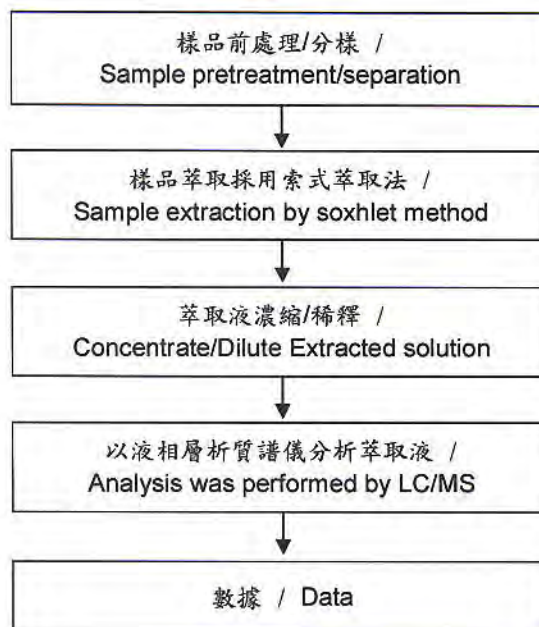
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### 索式萃取分析流程圖 / Analytical flow chart of Soxhlet extraction (LC/MS) procedure

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
  - 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang
- 【測試項目：全氟辛酸磺酸/全氟辛酸(銨)、苯並三唑類化合物 /  
Test Items: PFOS/PFOA、Benzotriazole】



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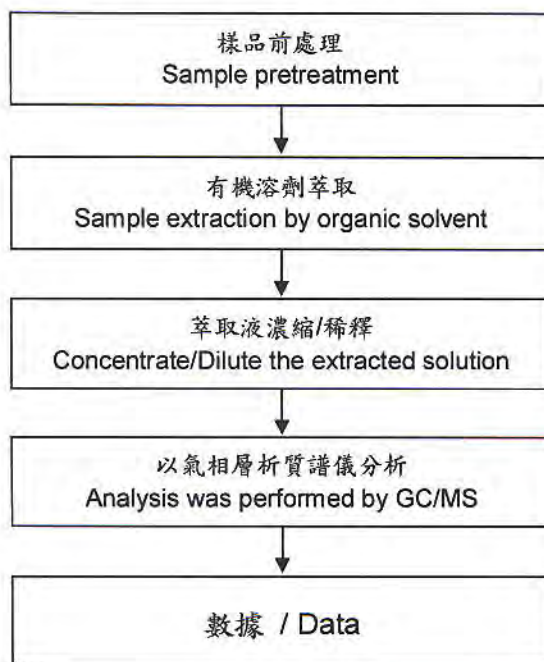
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### 含氯阻燃劑分析流程 / Chlorinated Flame retardant analytical flow chart

- 1) 測試人員：曾勃鈞 / Name of the person who made measurement: Barry Tseng
- 2) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang

- 參考方法(Reference method): US EPA 8270D, US EPA 3540
- 測試項目(Test Items): PCBs, PCNs, PCTs, Mirex, CP, MCCP / 多氯聯苯, 多氯奈, 多氯三聯苯, 滅蟻靈, 氯化石蠟, 中鏈氯化石蠟



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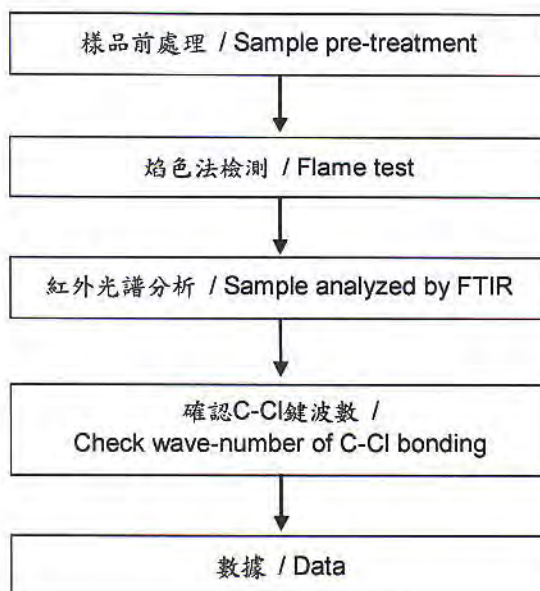
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### 聚氯乙稀物質判定分析流程圖 /

### Analysis flow chart for determination of PVC in material

- 測試人員：陳君涵 / Name of the person who made measurement: Ginny Chen
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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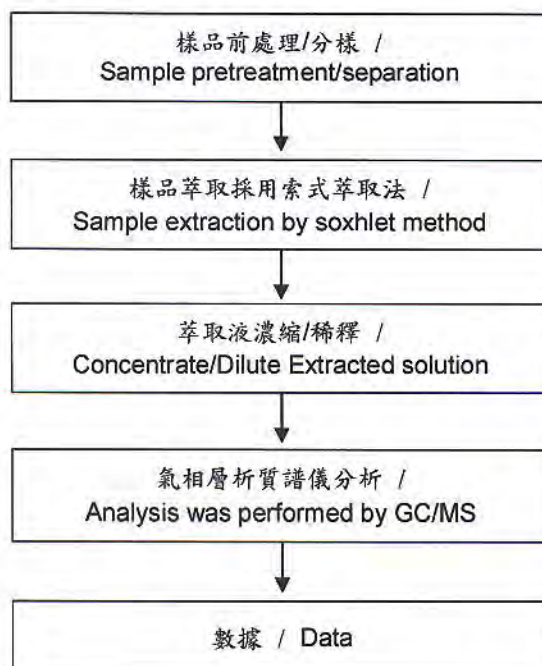
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### 索式萃取分析流程圖 / Analytical flow chart of Soxhlet extraction (GC/MS) procedure

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang

【測試項目：可塑劑、苯並三唑類化合物、六溴環十二烷、壬酚、單甲基二溴二苯基甲烷、有機磷化合物 / Test Items: Phthalate、Benzotriazole、HBCDD、NP、DBBT、Organic phosphorus compounds】



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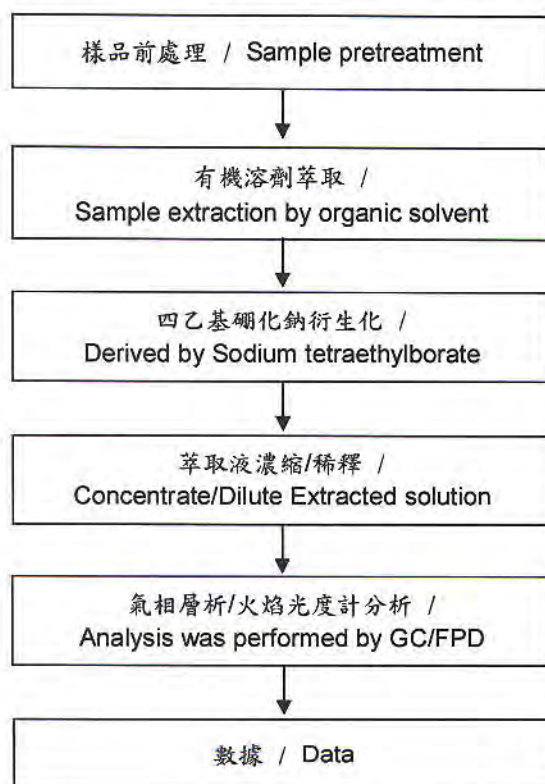
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### 有機錫分析流程圖 / Analytical flow chart of Organic-Tin content

- 測試人員：陳君涵 / Name of the person who made measurement: Ginny Chen
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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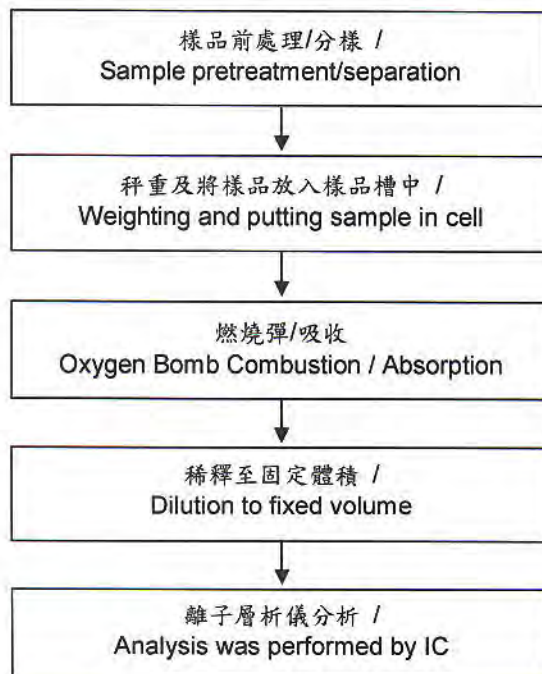
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### 鹵素分析流程圖 / Analytical flow chart of halogen content

- 1) 測試人員：陳恩臻 / Name of the person who made measurement: Rita Chen
- 2) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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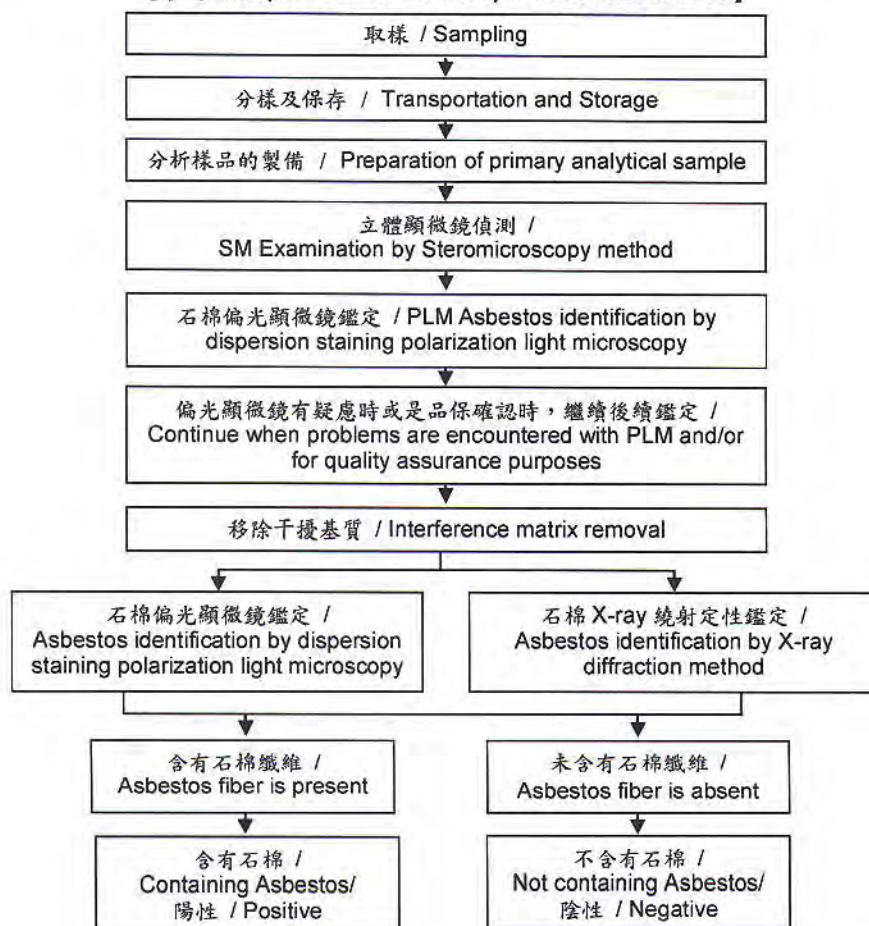
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### 石棉物質判定分析流程圖 / Analysis flow chart for determination of Asbestos

- 測試人員：高鍵忠 / Name of the person who made measurement: Victor Kao
- 測試負責人：魏明芬 / Name of the person in charge of measurement: Wendy Wei

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



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## 測試報告 Test Report

號碼(No.) : CE/2012/14843 日期(Date) : 2012/02/04 頁數(Page) : 30 of 32

功得電子工業股份有限公司

CONQUER ELECTRONICS CO., LTD.

新北市五股區五權五路26號

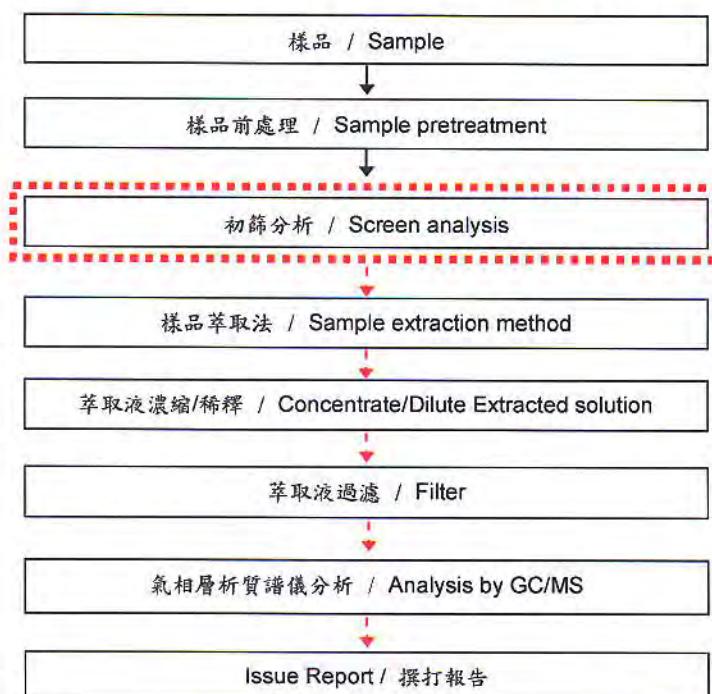
NO. 26 WUCYUAN 5TH ROAD, WUGU DISTRICT, NEW TAIPEI CITY 248, TAIWAN



### 分析流程圖 / Analytical flow chart

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang
- 【測試項目(Test Items): 多溴聯苯/多溴聯苯醚、四溴雙酚-A-雙 / PBB/PBDE, TBBP-A-bis】

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



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## 測試報告 Test Report

號碼(No.) : CE/2012/14843 日期(Date) : 2012/02/04 頁數(Page) : 31 of 32

功得電子工業股份有限公司

CONQUER ELECTRONICS CO., LTD.

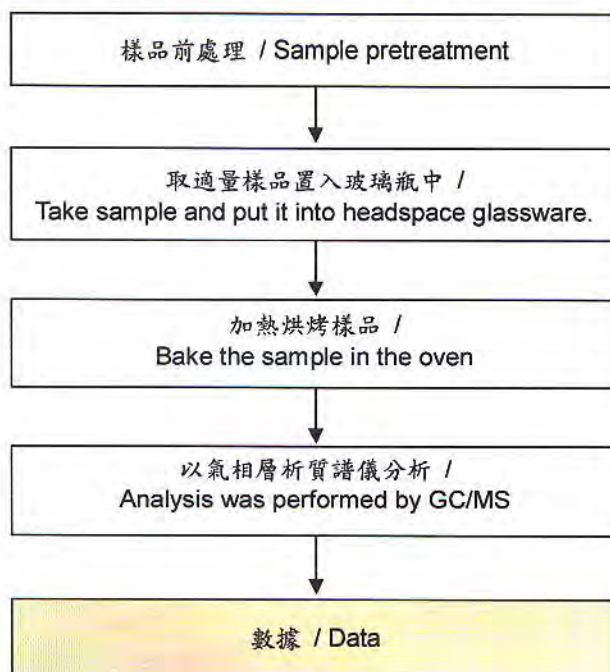
新北市五股區五權五路26號

NO. 26 WUCYUAN 5TH ROAD, WUGU DISTRICT, NEW TAIPEI CITY 248, TAIWAN



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

- 測試人員：吳椿景 / Name of the person who made measurement : Chun Wu
  - 測試負責人：陳新智 / Name of the person in charge of measurement : Shinjyh Chen
- 【參考方法(Reference method) : US EPA 5021】



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## 測試報告

## Test Report

號碼(No.) : CE/2012/14843 日期(Date) : 2012/02/04 頁數(Page) : 32 of 32

功得電子工業股份有限公司

CONQUER ELECTRONICS CO., LTD.

新北市五股區五權五路26號

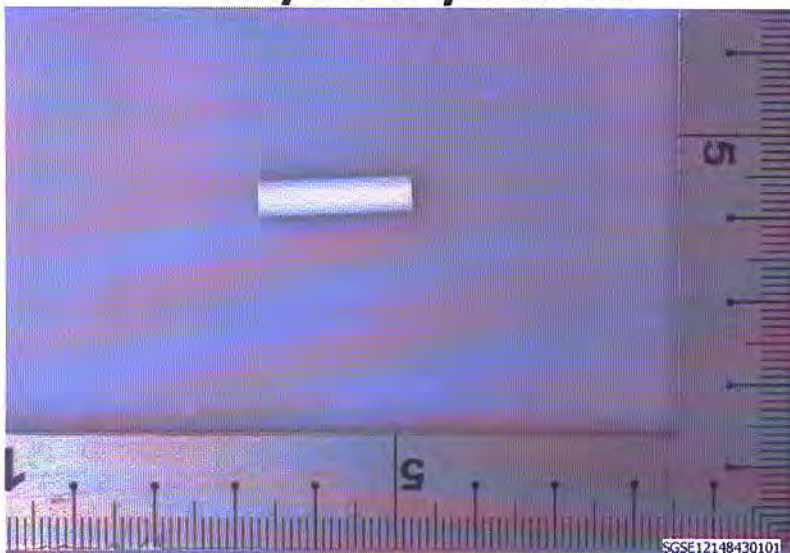
NO. 26 WUCYUAN 5TH ROAD, WUGU DISTRICT, NEW TAIPEI CITY 248, TAIWAN



\* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。\*

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

### CE/2012/14843



\*\* 報告結尾 (End of Report) \*\*

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## Test Report

No. SHAEC1216714738

Date: 25 Sep 2012

Page 1 of 5

ZHEJIANG ASIA GENERAL SOLDERING&BRAZING MATERIAL CO., LTD  
XIHU INDUSTRIAL PARK, SANDUN, HANGZHOU CITY, ZHEJIANG, PROVINCE, CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : LEAD-FREE SOLDER WIRE

SGS Job No. : SP12-028285 - SH  
Part No. (P/N) : YTW206  
Composition : Sn0.3Ag0.7CuCe  
Date of Sample Received : 21 Sep 2012  
Testing Period : 21 Sep 2012 - 25 Sep 2012  
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.



Fan Jingjie, JJ  
Approved Signatory

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Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.

## Test Report

No. SHAEC1216714738

Date: 25 Sep 2012

Page 2 of 5

Test Results :

### Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA12-167147.035	Silvery wire

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

Test Item(s)	Limit	Unit	MDL	035
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	50
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	-	-	◇	Negative
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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## Test Report

No. SHAEC1216714738

Date: 25 Sep 2012

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Test Item(s)	Limit	Unit	MDL	035
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

(2) ◇Spot-test:

Negative = Absence of Cr(VI) coating, Positive = Presence of Cr(VI) 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 Cr(VI) coating

Positive = Presence of Cr(VI) coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> sample surface area.

For corrosion protection coatings on metals: 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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SGS Standards Technical Services (Shanghai) Co., Ltd.  
Testing Center

3<sup>rd</sup> 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

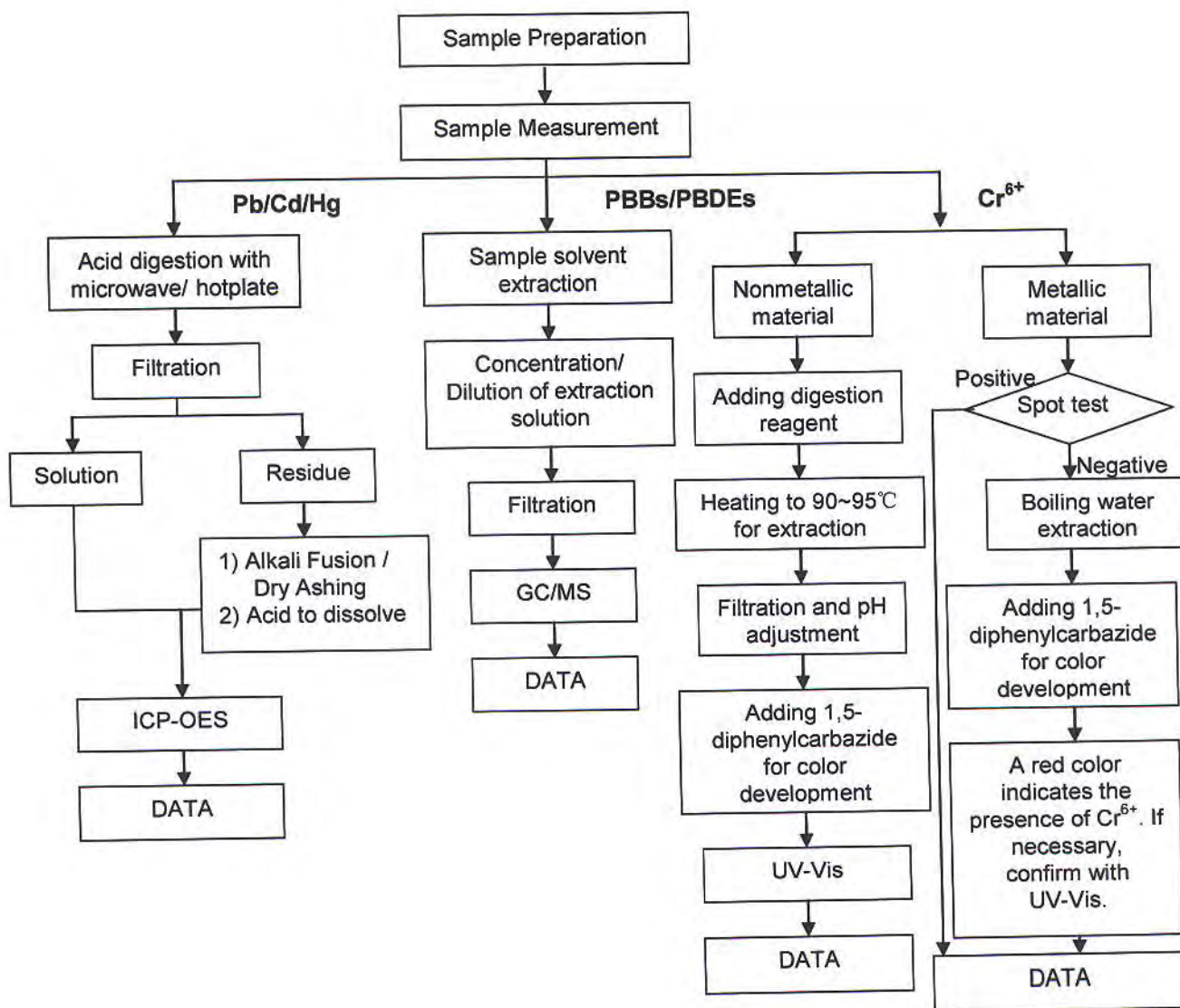
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[www.cn.sgs.com](http://www.cn.sgs.com)  
e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

## 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. ( $\text{Cr}^{6+}$  and PBBs/PBDEs test method excluded)



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## Test Report

No. SHAEC1216714738

Date: 25 Sep 2012

Page 5 of 5

Sample photo:



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## Test Report

No. CANEC1208305601

Date: 02 Jul 2012

Page 1 of 5

AIM SOLDER (SHEN ZHEN) CO.,LTD.

BLOCK 69,THIRD INDUSTRIAL ZONE,LUOTIAN VILLAGE,SONGGANG TOWN,BAOAN DISTRICT,SZ  
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : SOLDER WIRE AIM230  
FAST CORE H RSA605

SGS Job No. : CP12-030363 - SZ

Date of Sample Received : 26 Jun 2012

Testing Period : 26 Jun 2012 - 02 Jul 2012

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.

Kenny Wang  
Approved Signatory

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## Test Report

No. CANEC1208305601

Date: 02 Jul 2012

Page 2 of 5

Test Results :

### Test Part Description :

Specimen No.	SGS Sample ID	Description
1	CAN12-083056.001	Silvery metal wire

Remarks :

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

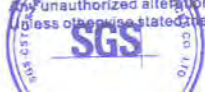
### RoHS Directive 2011/65/EU

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

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	78
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative
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

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## Test Report

No. CANEC1208305601

Date: 02 Jul 2012

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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

(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

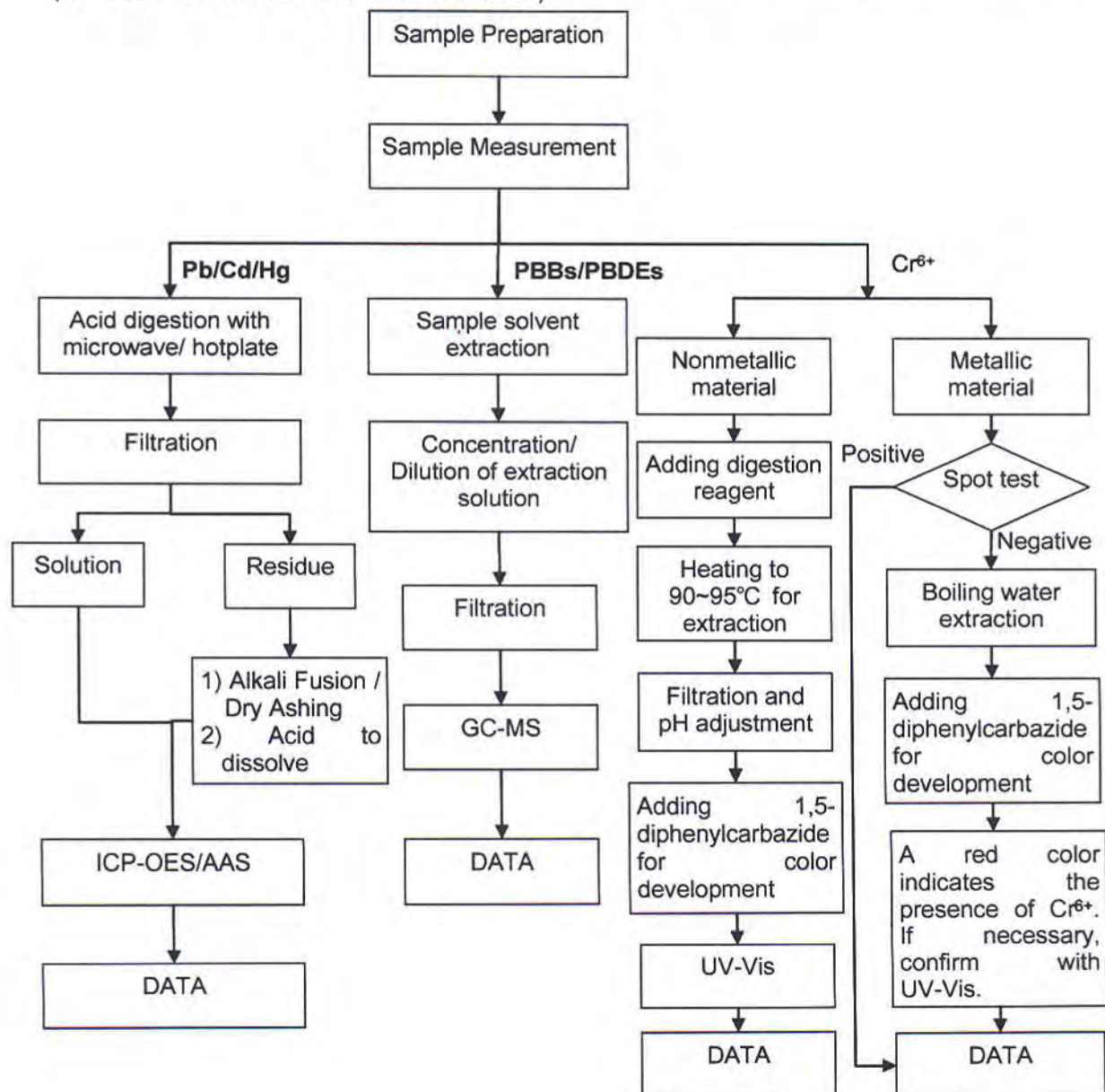
Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> sample surface area.

For corrosion protection coatings on metals: 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.

### ATTACHMENTS

#### RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bella Wang / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Ryan Yang
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).



## Test Report

No. CANEC1208305601

Date: 02 Jul 2012

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Sample photo:



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\*\*\* End of Report \*\*\*