Certificate of non-use of The Controlled Substances

Company name Littelfuse, Inc.

Product Covered SIDACtor®, QFN Package
PLED, QFN Package

Issue Date May 7, 2012

It is hereby certified by Littelfuse, Inc., that there is neither RoHS (EU Directive 2011/65/EU)-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.

It is also certified by Littelfuse, Inc., that the products listed in this report do not contain Halogens and their compounds judged per widely accepted industrial guidelines.

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

Koichiro Yoshimoto, Senior Product Engineer, Littelfuse, Inc.

(1) Parts, sub-materials and unit parts

This document covers SIDACtor & PLED QFN Package supplied by Littelfuse, Inc.
Please see page 2-4 for the complete list of part number covered by this report.

＜Homogeneous Materials used＞

Please see figure and table 1 on page 5 and table 2 on page 6 of this document.

(2) The analytical data on all measurable substances

Please see annex 1 through 7, attached to this document.

Remarks：

1. Pb (lead) contained in die bonding solder (item 8 on page 6) and passivation glass (item 7) to be categorized as exempt in RoHS Annex III 7(a) and 7(c)-I.

Please refer to Annex 8 of this report for the extract of the applicable exemptions of RoHS (EU Directive 2011/65/EU)

Littelfuse Part Number covered by this report

SIDACtor® QFN package products supplied by Littelfuse are categorized into three groups by Pb (lead) contents due to their design.
All products use the same raw materials and all products listed in this report meet RoHS requirement by using lead (Pb) exemptions.

Please follow table below to locate specific part number and its material breakdown.

Group #	Package	Generic Description	P/N table
1	QFN 3mm x 3mm x 1mm (2-leaded)	SIDACtor® PxxxxQ12ALRP PxxxxQ12BLRP SDP0242Q12FLRP PLED PLEDxxQ12 PLEDxxUQ12	See page 3
2	QFN 3.3mm x 3.3mm x 1mm (2-leaded)	SIDACtor® PxxxxQ22CLRP	See page 3
3	QFN 5mm x 6mm x 1.5mm (8-leaded)	SIDACtor® SDPxxxxQ38B SDPxxxxQ38CB SEPxxxxQ38CB	See page 4

GROUP 1: QFN 3mm x 3mm x 1mm

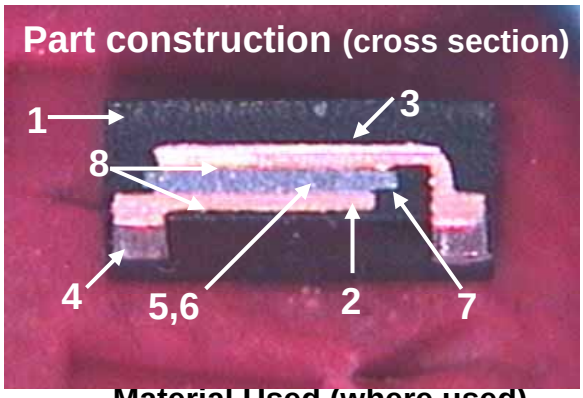
Standard (Catalog) Part Number			SPECIAL DEVICE P/N
PLED6Q12	P0900Q12ALRP	P0720Q12BLRP	Any Special P/N that has base standard P/N listed in this table.
PLED9Q12	P1100Q12ALRP	P0900Q12BLRP	
PLED13Q12	P1200Q12ALRP	P1100Q12BLRP	
PLED18Q12	P1300Q12ALRP	P1200Q12BLRP	
	P1500Q12ALRP	P1300Q12BLRP	
PLED6UQ12	P1800Q12ALRP	P1500Q12BLRP	
PLED9UQ12	P2000Q12ALRP	P1800Q12BLRP	
PLED13UQ12	P2300Q12ALRP	P2000Q12BLRP	
PLED18UQ12	P2500Q12ALRP	P2300Q12BLRP	
	P2600Q12ALRP	P2500Q12BLRP	
	P3100Q12ALRP	P2600Q12BLRP	
	P3500Q12ALRP	P3100Q12BLRP	
P0080Q12ALRP		P3500Q12BLRP	
P0300Q12ALRP	P0080Q12BLRP		
P0640Q12ALRP	P0300Q12BLRP	SDP0242Q12FLRP	
P0720Q12ALRP	P0640Q12BLRP		

GROUP 2: QFN 3.3mm x 3.3mm x 1mm

Standard (Catalog) Part Number			SPECIAL DEVICE P/N
P0080Q22CLRP	P1101Q22CLRP	P2500Q22CLRP	Any Special P/N that has base standard P/N listed in this table.
P0300Q22CLRP	P1200Q22CLRP	P2600Q22CLRP	
P0640Q22CLRP	P1300Q22CLRP	P3100Q22CLRP	
P0641Q22CLRP	P1301Q22CLRP	P3500Q22CLRP	
P0720Q22CLRP	P1500Q22CLRP		
P0721Q22CLRP	P1701Q22CLRP		
P0900Q22CLRP	P1800Q22CLRP		
P0901Q22CLRP	P2000Q22CLRP		
P1100Q22CLRP	P2300Q22CLRP		

GROUP 3: QFN 5mm x 6mm x 1.5mm

Standard (Catalog) Part Number			SPECIAL DEVICE P/N
SDP0080Q38B	SDP0080Q38CB	SEP0080Q38CB	Any Special P/N that has base-standard P/N listed in this table.
SDP0640Q38B	SDP0640Q38CB	SEP0640Q38CB	
SDP0720Q38B	SDP0720Q38CB	SEP0720Q38CB	
SDP0900Q38B	SDP0900Q38CB	SEP0900Q38CB	
SDP1100Q38B	SDP1100Q38CB		
SDP1300Q38B	SDP1300Q38CB		
SDP1800Q38B	SDP1800Q38CB		
SDP2600Q38B	SDP2600Q38CB		
SDP3100Q38B	SDP3100Q38CB		
SDP3500Q38B	SDP3500Q38CB		



Material Used (where used)

Table 1: Homogeneous Material Used

#	Description	Name of Material	Type	Analysis data
1	Molding compound	epoxy resin	plastic	annex 1
2,3	Lead frame	copper alloy	metal	annex 2
3A	Copper Slug	copper alloy	metal	annex 3 (Applicable to QFN 5mmx6mmx1.5mm only)
4	Matte-Tin plating	Tin	metal	annex 4, tested as plating cathode (Tin ball)
5	Silicon die	silicon	metal	annex 5, tested as Nickel-plated wafer.
6	Nickel electrode	nickel	metal	
7	Passivation glass	glass	glass	annex 6. Pb in this glass is exempted by RoHS Annex III 7(c)-I.
8	Die bonding solder	solder	metal	annex 7. Pb in this solder is exempted by RoHS Annex III 7(a).

Table 2: RoHS-regulated substance in raw materials

Components	Analysis Result						
	Cd Cadmium	Cr Chromium	Hg Mercury	Pb Lead	PBB	PBDE	Total Halogen
As Component Total	**< 2ppm**	**< 2ppm**	**< 5ppm**	**< 10ppm*[1] (7.0%*[2])**	**< 5ppm**	**< 5ppm**	**<50ppm**
Epoxy Resin compound (mixture of phenolix resin, epoxy resin, filler and non-Brominated fire retardant) See Annex 1 for the detail.	< 2ppm	< 2ppm	< 2ppm	< 2ppm	< 5ppm	<5ppm	< 50ppm
Lead frame / Clip / Slug (Copper Alloy, CDA194) See Annex 2 & 3 for the detail.	< 2ppm	< 2ppm	< 2ppm	< 2ppm	< 5ppm	< 5ppm	< 50ppm
Outside lead finish (Matte-Tin plated, Sn 100%) See Annex 4 for the detail.	< 2ppm	< 2ppm	< 2ppm	< 2ppm	< 5ppm	< 5ppm	< 50ppm
Silicon Die (Silicon + Ni electrode) See Annex 5 for the detail.	< 2ppm	< 2ppm	< 2ppm	48ppm *[3]	< 5ppm	< 5ppm	<50ppm
Passivation Glass See Annex 6 for the detail.	< 2ppm	< 2ppm	< 2ppm	40% *[4]	< 5ppm	< 5ppm	< 50ppm
Die Bonding Solder (Pb/Sn=95/5) See Annex 7 for the detail.	< 2ppm	< 2ppm	< 2ppm	95% *[5]	< 5ppm	< 5ppm	---

***1 Less than 10ppm Pb content overall, <u>excluding</u> Pb from the die bonding solder and the passivation glass on the silicon die.**

***2 Group 1 products: 7.0wt% or 2.0mg, Group 2 products: 6.8wt% or 2.3mg , Group 3 products: 5.6wt% or 8.0mg of Pb (lead) content overall including the RoHS-exempted use of Pb (lead)**

***3 Pb (lead) contained in silicon wafer is <u>not</u> exempted from restriction by RoHS, but considered as process contamination or naturally-occurring impurity in raw materials. Littelfuse does not add Pb (lead) intentionally.**

***4 Pb (lead) contained in passivation glass is exempted from restriction by RoHS Annex III 7(c)-I.**

***5 Pb (lead) contained in die bonding solder is exempted from restriction by RoHS Annex III 7(a).**

<u>Please refer to Annex 8 of this report for the applicable exemptions of RoHS (EU Directive 2011/65/EU)</u>

Annex 1: Analysis Result of Molding Compound (Page 1-4 of 8)

Validity unknown
For Questions, Please Contact with SGS www.tw.sgs.com

Test Report

No. : CE/2012/42804 Date : 2012/04/25 Page : 1 of 8

HITACHI CHEMICAL CO., LTD.
1772-1 KANAKUBO YUUKI-SHI IBARAKI, 307-0015, JAPAN

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

Sample Description	:	EPOXY MOLDING COMPOUND
Style/Item No.	:	CEL-9220HF
Sample Receiving Date	:	2012/04/16
Testing Period	:	2012/04/16 TO 2012/04/25

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

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

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Test Report

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HITACHI CHEMICAL CO., LTD.
1772-1 KANAKUBO YUUKI-SHI IBARAKI, 307-0015, JAPAN

Test Result(s)

PART NAME No.1 : DARK GRAY LUMP

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	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Antimony (Sb)	mg/kg	With reference to US EPA Method 3052 for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.
Halogen				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg		50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg		50	n.d.
Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.
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.

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No. : CE/2012/42804 Date : 2012/04/25 Page : 3 of 8

HITACHI CHEMICAL CO., LTD.
1772-1 KANAKUBO YUUKI-SHI IBARAKI, 307-0015, JAPAN

Test Item(s)	Unit	Method	MDL	Result No.1
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.

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

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Test Report

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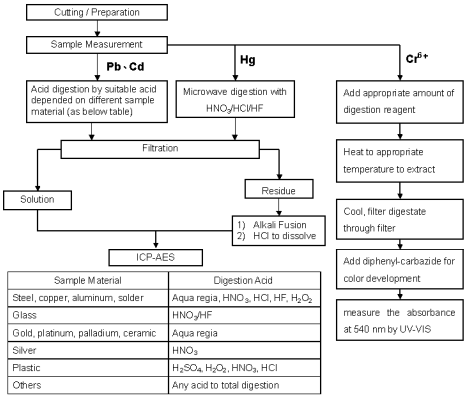
HITACHI CHEMICAL CO., LTD.
1772-1 KANAKUBO YUUKI-SHI IBARAKI, 307-0015, JAPAN

1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)
2) Name of the person who made measurement: Climbgreat Yang
3) Name of the person in charge of measurement: Troy 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

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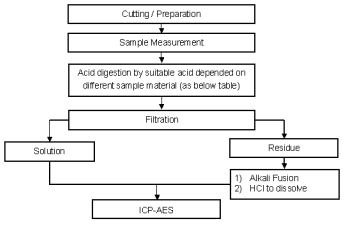
Annex 1: Analysis Result of Molding Compound (Page 5-8 of 8)

Test Report No. : CE/2012/42804 Date : 2012/04/25 Page : 5 of 8

HITACHI CHEMICAL CO., LTD.
1772-1 KANAKUBO YUUKI-SHI IBARAKI, 307-0015, JAPAN

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
2) Name of the person who made measurement: Climbgreat Yang
3) Name of the person in charge of measurement: Troy Chang

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



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

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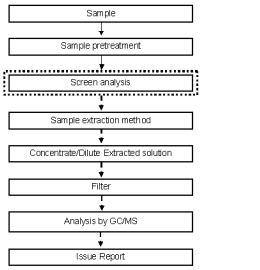
HITACHI CHEMICAL CO., LTD.
1772-1 KANAKUBO YUUKI-SHI IBARAKI, 307-0015, JAPAN

Analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang

[Test Items: PBB/PBDE, TBBP-A-bis]

First testing process ⟶ Optional screen process ···· Confirmation process ⇢



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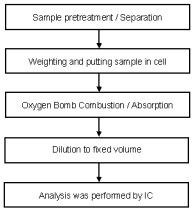
HITACHI CHEMICAL CO., LTD.
1772-1 KANAKUBO YUUKI-SHI IBARAKI, 307-0015, JAPAN

Analytical flow chart of halogen content

1) Name of the person who made measurement: Rita Chen
2) Name of the person in charge of measurement: Troy Chang



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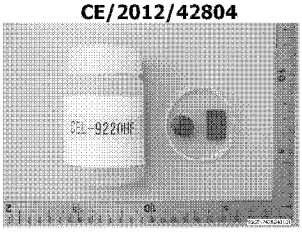
Test Report No. : CE/2012/42804 Date : 2012/04/25 Page : 8 of 8

HITACHI CHEMICAL CO., LTD.
1772-1 KANAKUBO YUUKI-SHI IBARAKI, 307-0015, JAPAN

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

CE/2012/42804



** End of Report **

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Annex 2: Analysis Result of Lead frame (Page 1-4 of 9)

SGS

Test Report No. CANEC1200178201 Date: 12 Jan 2012 Page 1 of 9

GPL LIMITED

NO.1,PIN ZHI ROAD,XIN AN INDUSTRIAL PARK,CHANG AN TOWN,DONG GUAN CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : A194

SGS Job No. :	CP12-000238 - SZ
Client Ref. Info. :	A194(CDA194,C194)
Date of Sample Received :	09 Jan 2012
Testing Period :	09 Jan 2012 - 12 Jan 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 :	A: 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.

Almay Gao
Approved Signatory

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SGS

Test Report No. CANEC1200178201 Date: 12 Jan 2012 Page 2 of 9

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	CAN12-001762.001	Copper-colored plated metal

Remarks :

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

A: 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	21
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	0	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. CANEC1200178201 Date: 12 Jan 2012 Page 3 of 9

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)>= a. Negative means the absence of CrVI on the tested areas
b. Positive means the presence of CrVI on the tested areas.
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.

B: 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

C: Elementary Analysis

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

Test Item(s)	Unit	MDL	001
Antimony (Sb)	mg/kg	10	ND

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D: Perfluorooctane Sulfonates (PFOS) and Perfluorooctanoic Acid (PFOA)

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

Test Item(s)	Unit	MDL	001
Perfluorooctane Sulfonates (PFOS) and related Acid,Metal Salt and Amide	µg/m²	1	ND
Perfluorooctanoic Acid (PFOA)	µg/m²	1	ND

Notes :

(1) PFOS Reference Information: Entry 53 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2006/122/EC)
(i) May not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0.005 % by mass.
(ii) May not be placed on the market in semi-finished products or articles, or parts thereof, if the concentration of PFOS is equal to or higher than 0.1 % by mass calculated with reference to the mass of structurally or microstructurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is equal to or higher than 1µg /m² of the coated material.
Please refer to Regulation (EC) No 552/2009 to get more detail information

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Annex 2: Analysis Result of Lead frame (Page 5-8 of 9)

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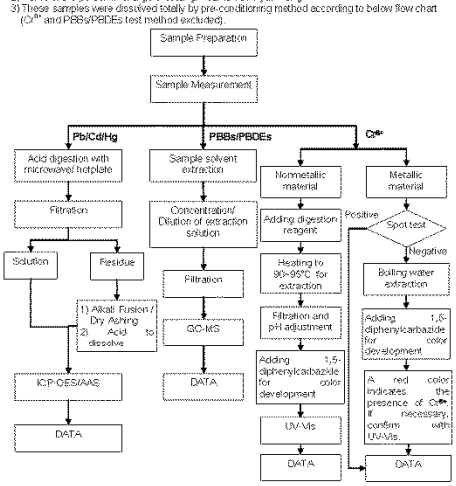
ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Bella Wang / Cutey Yu / Ross Zhan
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^{6+} and PBBs/PBDEs test method excluded).



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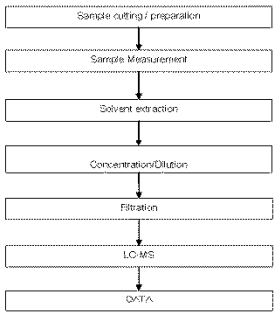
Test Report No. CANEC1200178201 Date: 12 Jan 2012 Page 6 of 9

ATTACHMENTS

PFOA / PFOS Testing Flow Chart

1) Name of the person who made testing: Cindy Huang
2) Name of the person in charge of testing: Ryan Yang



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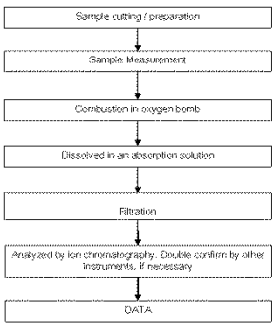
ATTACHMENTS

Halogen Testing Flow Chart

1) Name of the person who made testing: Bob Song
2) Name of the person in charge of testing: Ran Qiao



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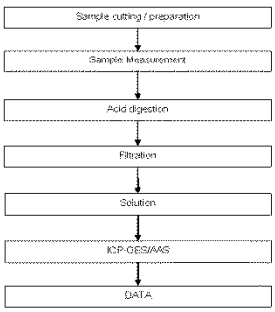
Test Report No. CANEC1200178201 Date: 12 Jan 2012 Page 8 of 9

ATTACHMENTS

Elementary Testing Flow Chart

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



Annex 2: Analysis Result of Lead frame (Page 9 of 9)

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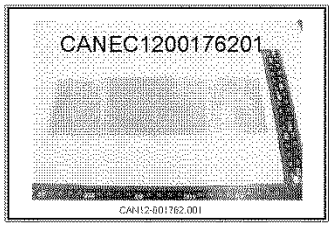
Sample photo:



CANEC1200176201

SGS authenticate the photo on original report only

*** End of Report ***

Annex 3: Analysis Result of Slug (Page 1-4 of 4)

Intertek

TEST REPORT Number : WUXH00005730

Applicant : CONCORD SEMICONDUCTOR (WUXI) CO., LTD.
EAST 1#,ZHENFA 6 ROAD, SHUO PARK
INDUSTRIAL PARK WUXI NATIONAL HIGH-TECH
DEVELOPMENT ZONE, WUXI, JIANGSU,CHINA
Attn : ZHANG XIAOPENG

Date : Aug 04, 2011

Sample Description As Declared:
One (1) Piece Of Submitted Sample Said To Be : **Copper Metal.**
Item Name : Cu Slug.
Vendor : Proprietary.
Component Or Part No. : Copper
Test Item : Cd/Pb/Hg,CrVI.

Tests Conducted:
As Requested By The Applicant, For Details Refer To Attached Pages

Summary:

Tested Sample	Standard	Result
Submitted Sample	With Reference To Test Method Of IEC 62321 Edition 1.0: 2008 And Maximum Concentration Limits Quoted From RoHS Directives 2002/95/EC And Amendment 2005/618/EC	PASS

Prepared And Checked By:
For Intertek Testing Services Wuxi Ltd.

Jessica Lu
General Manager

Intertek Testing Services Wuxi Ltd.
No.8 Fuhan Road, Yixhan Economic Development Zone,
Wuxi 214101, Jiangsu, China
Tel: +86 510 8821 4567 Fax: +86 510 8820 5438 E-mail: consumer-goods.wuxi@intertek.com

Intertek

TEST REPORT Number : WUXH00005730

Tests Conducted (As Requested By The Applicant)
1 RoHS Directives Test
(A) Test Result Summary:

Testing Item	Result
Cadmium (Cd) Content (mg/kg)	ND
Lead (Pb) Content (mg/kg)	19
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI) (Cr^{6+}) Result (By Boiling Water Extraction On Metal) (mg/kg With 50cm²)	N

Remark:
mg/kg = Milligram Per Kilogram = ppm
mg/kg With 50cm² = Milligram Per Kilogram With 50 Square Centimeter
ND = Not Detected
N=Negative

(B)RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr^{6+})	0.1% (1000 mg/kg)

The Above Limits Were Quoted From 2002/95/EC And Amendment 2005/618/EC For Homogeneous Material.

(C) Test Method:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Lead (Pb) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Mercury (Hg) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Chromium (VI) (Cr^{6+}) Content (For Metal)	With Reference To IEC 62321 Edition 1.0: 2008, By Boiling Water Extraction And Determined By UV-VIS Spectrophotometer	0.02mg/kg With 50cm² (In Testing Solution)

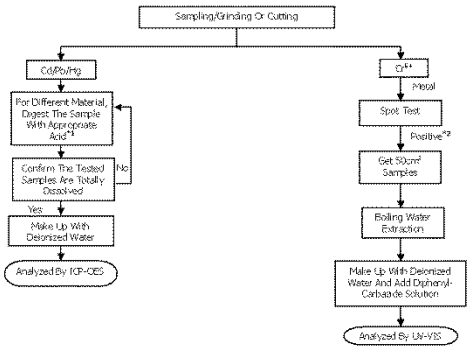
Date Sample Received: Aug 01, 2011
Testing Period: Aug 01, 2011 To Aug 04, 2011

Intertek Testing Services Wuxi Ltd.
No.8 Fuhan Road, Yixhan Economic Development Zone,
Wuxi 214101, Jiangsu, China
Tel: +86 510 8821 4567 Fax: +86 510 8820 5438 E-mail: consumer-goods.wuxi@intertek.com

Intertek

TEST REPORT Number : WUXH00005730

Tests Conducted (As Requested By The Applicant)
(D) Measurement Flowchart:
Reference Standard: IEC 62321 Edition 1.0: 2008



Chemist: Inorganic (Ann Luo/Fred Wang/Ally Wan)

Remarks:
*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO_3,HCl,HF,H_2O_2,H_2SO_4
Metals	HNO_3,HCl,HF
Electronics	HNO_3,HCl,H_2O_2,HBF$_4$

*2: If The Result Of Spot Test Is Positive, Chromium VI Would Be Determined As Detected.

Intertek Testing Services Wuxi Ltd.
No.8 Fuhan Road, Yixhan Economic Development Zone,
Wuxi 214101, Jiangsu, China
Tel: +86 510 8821 4567 Fax: +86 510 8820 5438 E-mail: consumer-goods.wuxi@intertek.com

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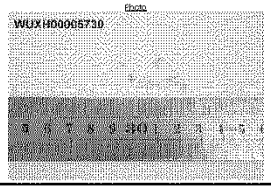
TEST REPORT Number : WUXH00005730

Tests Conducted (As Requested By The Applicant)

Photo



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Wuxi 214101, Jiangsu, China
Tel: +86 510 8821 4567 Fax: +86 510 8820 5438 E-mail: consumer-goods.wuxi@intertek.com

Annex 4: Analysis Result of Matte-Tin plating (page 1-4 of 35)

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測試報告
Test Report

號碼(No.) : CE/2011/C1642 日期(Date) : 2011/12/15 頁數(Page) : 1 of 35

昇貿科技股份有限公司
SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN

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

樣品名稱(Sample Description)	:	PURE TIN
樣品型號(Style/Item No.)	:	H99.99S
收件日期(Sample Receiving Date)	:	2011/12/09
測試期間(Testing Period)	:	2011/12/09 TO 2011/12/15

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

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

號碼(No.) : CE/2011/C1642 日期(Date) : 2011/12/15 頁數(Page) : 2 of 35

昇貿科技股份有限公司
SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN

測試結果(Test Results)

測試部位(PART NAME)No.1 ： 銀色金屬 (SILVER COLORED METAL)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321: 2008 - Clause 9方法，以感應耦合電漿原子發射光譜儀檢測。/ With reference to IEC 62321: 2008 - Clause 9 and performed by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321: 2008 - Clause 9方法，以感應耦合電漿原子發射光譜儀檢測。/ With reference to IEC 62321: 2008 - Clause 9 and performed by ICP-AES.	2	29
汞 / Mercury (Hg)	mg/kg	參考IEC 62321: 2008 - Clause 7方法，以感應耦合電漿原子發射光譜儀檢測。/ With reference to IEC 62321: 2008 - Clause 7 and performed by ICP-AES.	2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI)	**	參考IEC 62321: 2008 - Annex B方法，以沸水萃取法檢測。/ With reference to IEC 62321: 2008 - Annex B and performed by Boiling water extraction Method.#	#	Negative
銻 / Antimony (Sb)	mg/kg	參考US EPA 3050B方法，以感應耦合電漿原子發射光譜儀檢測銻含量。/ With reference to US EPA Method 3050B for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.
鈹 / Beryllium (Be)	mg/kg	參考US EPA 3050B方法，以感應耦合電漿原子發射光譜儀檢測鈹含量。/ With reference to US EPA Method 3050B for Beryllium Content. Analysis was performed by ICP-AES.	2	n.d.

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測試報告
Test Report

號碼(No.) : CE/2011/C1642 日期(Date) : 2011/12/15 頁數(Page) : 3 of 35

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SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, 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) No.1
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
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.
多氯萘 / 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.
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.
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.
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.
溴甲烷 / Bromomethane (CAS No.: 74-83-9)	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.
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.

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測試報告
Test Report

號碼(No.) : CE/2011/C1642 日期(Date) : 2011/12/15 頁數(Page) : 4 of 35

昇貿科技股份有限公司
SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, 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) No.1
2-(3', 5'-二叔丁基-2'-羥基苯基)苯並三氮唑 / 2-(3,5-di-tert-butyl-2-hydroxyphenyl)-2H-benzotriazole (CAS No.: 3846-71-7)	mg/kg	參考US EPA 3540C方法，以氣相層析/質譜儀檢測之。/ With reference to US EPA 3540C method. Analysis was performed by GC/MS.	5	n.d.
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321: 2008 - Annex A方法，以氣相層析儀/質譜儀檢測。/ With reference to IEC 62321: 2008 - Annex A and performed by GC/MS.	-	n.d.
一溴聯苯 / Monobromobiphenyl	mg/kg		5	n.d.
二溴聯苯 / Dibromobiphenyl	mg/kg		5	n.d.
三溴聯苯 / Tribromobiphenyl	mg/kg		5	n.d.
四溴聯苯 / Tetrabromobiphenyl	mg/kg		5	n.d.
五溴聯苯 / Pentabromobiphenyl	mg/kg		5	n.d.
六溴聯苯 / Hexabromobiphenyl	mg/kg		5	n.d.
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n.d.
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n.d.
九溴聯苯 / Nonabromobiphenyl	mg/kg		5	n.d.
十溴聯苯 / Decabromobiphenyl	mg/kg		5	n.d.
多溴聯苯醚總和 / Sum of PBDEs	mg/kg		-	n.d.
一溴聯苯醚 / Monobromodiphenyl ether	mg/kg		5	n.d.
二溴聯苯醚 / Dibromodiphenyl ether	mg/kg		5	n.d.
三溴聯苯醚 / Tribromodiphenyl ether	mg/kg		5	n.d.
四溴聯苯醚 / Tetrabromodiphenyl ether	mg/kg		5	n.d.
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg		5	n.d.
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg		5	n.d.
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg		5	n.d.
八溴聯苯醚 / Octabromodiphenyl ether	mg/kg		5	n.d.
九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg		5	n.d.
十溴聯苯醚 / Decabromodiphenyl ether	mg/kg		5	n.d.

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Annex 4: Analysis Result of Matte-Tin plating (page 5-8 of 35)

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測試報告
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昇貿科技股份有限公司
SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, 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) No.1
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		0.03	n.d.
三丁基錫氧化物 / Tributyl Tin Oxide (TBTO)*** (CAS No.: 56-35-9)	mg/kg		-	n.d.
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
鐵石棉 / Amosite (CAS No.: 12172-73-5)	%		1	Negative
斜方角閃石 / Anthophyllite (CAS No.: 77536-67-5)	%		1	Negative
白石棉 / Chrysotile (CAS No.: 12001-29-5)	%		1	Negative
青石棉 / Crocidolite (CAS No.: 12001-28-4)	%		1	Negative
透閃石 / Tremolite (CAS No.: 77536-68-6)	%		1	Negative
偶氮 (AZO)				
1): 4-胺基聯苯 / 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.
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.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1
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): 鄰胺基偶氮甲苯 / 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.
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.

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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-甲基苯胺 / 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(2-氯苯胺) / 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.
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.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1
22): 對胺基偶氮苯 / 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.
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.

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Annex 4: Analysis Result of Matte-Tin plating (page 9-12 of 35)

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1
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.
氟氯碳化物 (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.
氟氯碳化物 (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.
氟氯碳化物 (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.
氟氯碳化物 (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.
氟氯碳化物 (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.
氟氯碳化物 (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.
氟氯碳化物 (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.

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氟氯碳化物 (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.
氫氟氯碳化物 / HCFCs (Hydrochlorofluorocarbons)				
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.

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氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.

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氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.
氫氟氯碳化物 (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.

Annex 4: Analysis Result of Matte-Tin plating (page 13-16 of 35)

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昇貿科技股份有限公司
SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, 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) No.1
氟氯氫碳化物 (HCFC)-251 (CAS No.: 421-41-9)	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)-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.
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.

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昇貿科技股份有限公司
SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, 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) No.1
不完全鹵化氟溴化物 / HBFCs (Hydrobromofluorocarbons)				
不完全鹵化氟溴化物 (HBFC)-21B2 ($CHFBr_2$) (CAS No.: 1868-53-7)	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.
不完全鹵化氟溴化物 (HBFC)-22B1 (CHF_2Br) (CAS No.: 1511-62-2)	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.
不完全鹵化氟溴化物 (HBFC)-31B1 (CH_2FBr) (CAS No.: 373-52-4)	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.
不完全鹵化氟溴化物 (HBFC)-121B4 (C_2HFBr_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.
不完全鹵化氟溴化物 (HBFC)-122B3 ($C_2HF_2Br_3$)	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.
不完全鹵化氟溴化物 (HBFC)-123B2 ($C_2HF_3Br_2$)	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.
不完全鹵化氟溴化物 (HBFC)-124B1 (C_2HF_4Br)	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.
不完全鹵化氟溴化物 (HBFC)-131B3 ($C_2H_2FBr_3$)	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.
不完全鹵化氟溴化物 (HBFC)-132B2 ($C_2H_2F_2Br_2$)	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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SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, 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) No.1
不完全鹵化氟溴化物 (HBFC)-133B1 ($C_2H_2F_3Br$)	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.
不完全鹵化氟溴化物 (HBFC)-141B2 ($C_2H_3FBr_2$)	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.
不完全鹵化氟溴化物 (HBFC)-142B1 ($C_2H_3F_2Br$)	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.
不完全鹵化氟溴化物 (HBFC)-151B1 (C_2H_4FBr)	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.
不完全鹵化氟溴化物 (HBFC)-221B6 (C_3HFBr_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.
不完全鹵化氟溴化物 (HBFC)-222B5 ($C_3HF_2Br_5$)	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.
不完全鹵化氟溴化物 (HBFC)-223B4 ($C_3HF_3Br_4$)	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.
不完全鹵化氟溴化物 (HBFC)-224B3 ($C_3HF_4Br_3$)	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.
不完全鹵化氟溴化物 (HBFC)-225B2 ($C_3HF_5Br_2$)	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.
不完全鹵化氟溴化物 (HBFC)-226B1 (C_3HF_6Br)	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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昇貿科技股份有限公司
SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, 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) No.1
不完全鹵化氟溴化物 (HBFC)-231B5 ($C_3H_2FBr_5$)	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.
不完全鹵化氟溴化物 (HBFC)-232B4 ($C_3H_2F_2Br_4$)	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.
不完全鹵化氟溴化物 (HBFC)-233B3 ($C_3H_2F_3Br_3$)	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.
不完全鹵化氟溴化物 (HBFC)-234B2 ($C_3H_2F_4Br_2$)	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.
不完全鹵化氟溴化物 (HBFC)-235B1 ($C_3H_2F_5Br$)	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.
不完全鹵化氟溴化物 (HBFC)-241B4 ($C_3H_3FBr_4$)	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.
不完全鹵化氟溴化物 (HBFC)-242B3 ($C_3H_3F_2Br_3$)	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.
不完全鹵化氟溴化物 (HBFC)-243B2 ($C_3H_3F_3Br_2$)	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.
不完全鹵化氟溴化物 (HBFC)-244B1 ($C_3H_3F_4Br$)	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.
不完全鹵化氟溴化物 (HBFC)-251B3 ($C_3H_4FBr_3$)	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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Annex 4: Analysis Result of Matte-Tin plating (page 17-20 of 35)

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昇貿科技股份有限公司
SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, 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) No.1
不完全鹵化氟溴化物 (HBFC)-253B2 ($C_3H_4F_3Br_2$)	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.
不完全鹵化氟溴化物 (HBFC)-263B1 ($C_3H_4F_3Br$)	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.
不完全鹵化氟溴化物 (HBFC)-261B2 ($C_3H_5FBr_2$)	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.
不完全鹵化氟溴化物 (HBFC)-262B1 ($C_3H_5F_2Br$)	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.
不完全鹵化氟溴化物 (HBFC)-271B1 (C_3H_6FBr)	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.
氫氟碳化物 / HFCs (Hydrofluorocarbon)				
氫氟碳化物 (HFC)-23 (CHF_3) (CAS No.: 75-46-7)	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.
氫氟碳化物 (HFC)-32 (CH_2F_2) (CAS No.: 75-10-5)	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.
氫氟碳化物 (HFC)-41 (CH_3F) (CAS No.: 593-53-3)	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.
氫氟碳化物 (HFC)-43-10mee ($C_5H_2F_{10}$)	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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昇貿科技股份有限公司
SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, 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) No.1
氫氟碳化物 (HFC)-125 (C_2HF_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.
氫氟碳化物 (HFC)-134 ($C_2H_2F_4$)	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.
氫氟碳化物 (HFC)-134a (CH_2FCF_3) (CAS No.: 811-97-2)	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.
氫氟碳化物 (HFC)-143 (CH_3F_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.
氫氟碳化物 (HFC)-143a (CH_3F_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.
氫氟碳化物 (HFC)-152a ($C_2H_4F_2$) (CAS No.: 75-37-6)	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.
氫氟碳化物 (HFC)-227ea (C_3HF_7) (CAS No.: 431-89-0)	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.
氫氟碳化物 (HFC)-236fa ($C_3H_2F_6$)	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.
氫氟碳化物 (HFC)-236ea ($C_3H_2F_6$) (CAS No.: 431-63-0)	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.
氫氟碳化物 (HFC)-245ca ($C_3H_3F_5$)	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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昇貿科技股份有限公司
SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, 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) No.1
氫氟碳化物 (HFC)-245fa ($C_3H_3F_5$)	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.
氫氟碳化物 (HFC)-365mfc ($C_4H_5F_5$)	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.
全氟碳化物 / PFCs (Perfluorocarbon)				
四氟甲烷 / F14 (CAS No.: 75-73-0)	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.
六氟乙烷 / Fluorocarbon 116 (CAS No.: 76-16-4)	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.
八氟丙烷 / Freon 218 (CAS No.: 76-19-7)	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.
十氟丁烷 / Decafluorobutane (CAS No.: 355-25-9)	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.
八氟環丁烷 / Freon C318 (CAS No.: 115-25-3)	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.
全氟-1-丁烯 / Perfluoro-1-butene (CAS No.: 357-26-6)	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.
全氟異丁烯 / perfluoroisobutene (CAS No.: 382-21-8)	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.

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

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SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, 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) No.1
1,4-二氫八氟丁烷 / 1,4-dihydrooctafluorobutane (CAS No.: 377-36-6)	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.
2-全氟甲基丁烷 / nonafluoro-2-(trifluoromethyl)butane (CAS No.: 594-91-2)	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.
全氟戊烷 / perfluoro-n-pentane (CAS No.: 678-26-2)	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.
2-全氟甲基戊烷 / 2-perfluoromethylpentane (CAS No.: 355-04-4)	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.
全氟己烷 / perfluorohexane (CAS No.: 355-42-0)	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.

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Annex 4: Analysis Result of Matte-Tin plating (page 21-24 of 35)

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1
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.
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.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1
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.
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.
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.

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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 %)
8. # = a. Positive means the presence of CrVI on the tested areas (Positive表示測試區域偵測到六價鉻)
   b. Negative means the absence of CrVI on the tested areas (Negative表示測試區域未偵測到六價鉻)
   The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm^2 tested areas. / 該溶液濃度≧0.02 mg/kg with 50 cm^2 (tested areas)
9. ***：該物質是由"三丁基錫"之測試結果計算得知，其MDL是針對"三丁基錫"之評估。(The substance was calculated by the test results of Tributyl Tin. The MDL was evaluated for Tributyl Tin.)

PFOS參考資訊(Reference Information)：指令 2006/122/EC (Directive 2006/122/EC)

(1) 該物質不可置於市場上或使用於特殊物質或配置成分重量濃度等於或大於0.005%.
(May not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0.005% by mass.)

(2) 該物質不可置於市場上的半成品或商品或其部件：假若零件上明顯地具有PFOS成分者照結構上及微細構造上計算PFOS重量濃度等於或大於0.1%，而紡織品或其他覆蓋物質，如果PFOS在覆蓋物質中含量等於或大於1μg/m²。
(May not be placed on the market in semi-finished products or articles, or parts thereof, if the concentration of PFOS is equal to or higher than 0.1% by mass calculated with reference to the mass of structurally or microstructurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is equal to or higher than 1μg/m² of the coated material.)

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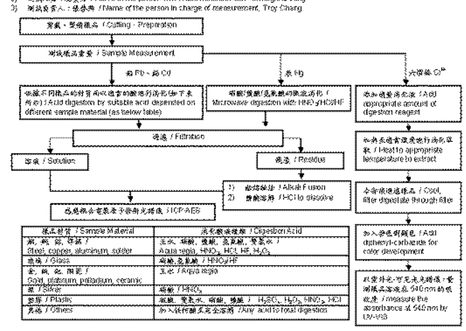
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN

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^{6+} test method excluded)
2) 測試人員：楊璨瑋 / 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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Annex 4: Analysis Result of Matte-Tin plating (page 25-28 of 35)

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1) 樣品以下的處理方法溶解：樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
2) 測試人員：簡雯倩 / Name of the person who made measurement: Cindy Yeng
3) 測試負責人：張勝興 / Name of the person in charge of measurement: Troy Chang

元素以 ICP-AES 分析的消化流程圖

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

剪裁、製備樣品 / Cutting、Preparation

測試樣品重量 / Sample Measurement

依據不同樣品的材質而以適當的酸進行消化(如下表所示) / Acid digestion by suitable acid depended on different sample material (as below table)

過濾 / Filtration

溶液 / Solution

殘渣 / Residue

1)鹼熔融法 / Alkali Fusion
2)王水溶解 / HCl to dissolve

感應耦合電漿原子發射光譜儀 / ICP-AES

鋼、銅、鎳、焊錫 / Steel, copper, aluminum, solder	王水、硝酸、鹽酸、氫氟酸、雙氧水 / Aqua regia, HNO3, HCl, HF, H2O2
玻璃 / Glass	硝酸、氫氟酸 / HNO3/HF
金、鉑、鈀、陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO3
塑膠 / Plastic	硝酸、雙氧水、硝酸、氫氟 / HNO3, H2O2, HNO3, HCl
其他 / Others	加入使得酸呈完全溶解 / Any acid to total digestion

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聚氯乙烯物質判定分析流程圖 /

Analysis flow chart for determination of PVC in material

- 測試人員：陳雯迪 /Name of the person who made measurement: Ginny Chen
- 測試負責人：張勝興 /Name of the person in charge of measurement: Troy Chang

樣品前處理 / Sample pre-treatment

燃燒法檢測 / Flame test

紅外光譜分析 / Sample analyzed by FTIR

確認C-Cl鍵波數 /
Check wave-number of C-Cl bonding

數據 / Data

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

1) 測試人員：陳馬琳 / Name of the person who made measurement: Rita Chen
2) 測試負責人：張勝興 / Name of the person in charge of measurement: Troy Chang

樣品前處理/分離 /
Sample pretreatment/separation

稱重及將樣品放入燃燒槽中 /
Weighting and putting sample in cell

氧瓶燃燒吸收
Oxygen Bomb Combustion / Absorption

稀釋至固定體積 /
Dilution to fixed volume

離子層析儀分析 /
Analysis was performed by IC

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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：高健志 / 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]

取樣 / Sampling

分析樣品的製備 / Preparation of primary analytical sample

立體顯微鏡檢測 /
SM Examination by Stereomicroscopy method

石棉偏光顯微鏡鑑定 / PLM Asbestos identification by dispersion staining polarization light microscopy

偏光顯微鏡有疑慮時或是石棉確認時，繼續定性鑑定 /
Continue when problems are encountered with PLM and/or for quality assurance purposes

移除干擾基質 /Interference matrix removal

石棉偏光顯微鏡鑑定 /
Asbestos identification by dispersion staining polarization light microscopy

石棉 X-ray 繞射鑑定 /
Asbestos identification by X-ray diffraction method

含有石棉纖維 /
Asbestos fiber is present

含有石棉 /
Containing Asbestos/
陽性 /Positive

未含有石棉纖維 /
Asbestos fiber is absent

不含有石棉 /
Not containing Asbestos/
陰性 /Negative

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Annex 4: Analysis Result of Matte-Tin plating (page 29-32 of 35)

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測試報告
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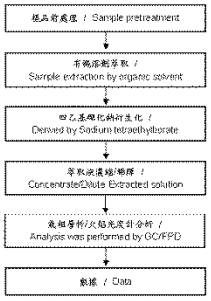
昇貿科技股份有限公司
SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN

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

- 測試人員：陳若涵 / Name of the person who made measurement: Ginny Chen
- 測試負責人：張修棋 / Name of the person in charge of measurement: Troy Chang



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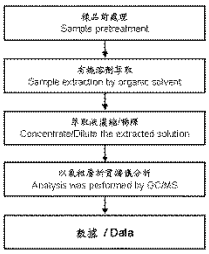
SHENMAO TECHNOLOGY INC.
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN

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

1) 測試人員：曾毓鈞 / Name of the person who made measurement: Barry Tseng
2) 測試負責人：張修棋 / 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, 多氯萘, 多氯三聯苯, 滅蟻靈, 氯化石蠟, 中鏈氯化石蠟



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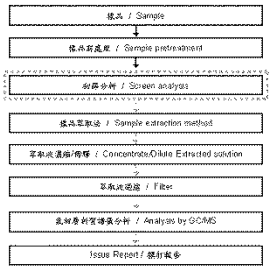
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN

分析流程圖 / Analytical flow chart

- 測試人員：羅明翰 / Name of the person who made measurement: Roman Wong
- 測試負責人：張修棋 / 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 類 / PBB/PBDE, TBBP-A-bis】



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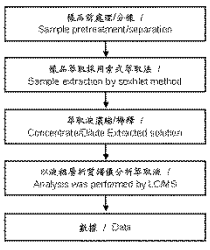
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN

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

- 測試人員：羅明翰 / Name of the person who made measurement: Roman Wong
- 測試負責人：張修棋 / Name of the person in charge of measurement: Troy Chang

【測試項目：全氟辛烷磺酸/全氟辛烷磺酸鹽)、苯並三唑類化合物 /
Test Items: PFOS/PFOA - Benzotriazole】



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Annex 4: Analysis Result of Matte-Tin plating (page 33-35 of 35)

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NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN

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

- 測試人員：黃勝衡 / Name of the person who made measurement: Roman Wong
- 測試負責人：張雅爽 / 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、安息、多甲基二苯二苯基甲烷、有機磷化合物 / Test items: Phthalate、Benzotriazole、HBCDD、NP、DBBT、Organic phosphorus compounds】

樣品前處理/分離 /
Sample pretreatment/separation

↓

樣品萃取採用索式萃取法 /
Sample extraction by soxhlet method

↓

萃取液濃縮/稀釋 /
Concentrate/Dilute Extracted solution

↓

氣相層析質譜儀分析 /
Analysis was performed by GC/MS

↓

數據 / Data

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NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, 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：吳倫秀 / 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：Shinyh Chen

【參考方法(Reference method)：US EPA 5021】

樣品前處理 / Sample pretreatment

↓

取適量樣品置入玻璃瓶中 /
Take sample and put it into headspace glasswars.

↓

加熱烘烤樣品 /
Bake the sample in the oven

↓

以氣相層析質譜儀分析 /
Analysis was performed by GC/MS

↓

數據 / Data

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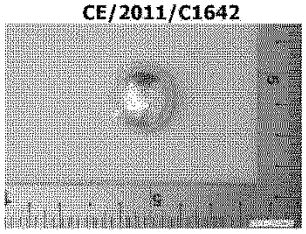
桃園縣觀音工業區工業二路12-1號
NO. 12-1, GONGYE 2ND RD., GUANYIN INDUSTRIAL AREA, TAOYUAN COUNTY 328, TAIWAN

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

CE/2011/C1642



** 報告結尾 (End of Report) **

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Annex 5: Analysis Result of Ni-plated Wafer (Page 1-4 of 5)

Intertek

TEST REPORT Number : WUXH00005703

Applicant : CONCORD SEMICONDUCTOR (WUXI) CO., LTD.
EAST 1#,ZHENFA 6 ROAD, SHUO FANG
INDUSTRIAL PARK WUXI NATIONAL HIGH-TECH
DEVELOPMENT ZONE, WUXI, JIANGSU, CHINA
Attn : ZHANG XIAOPENG

Date : Aug 04, 2011

Sample Description As Declared:
One (1) Piece Of Submitted Sample Said To Be : **Silvery Grey Metal.**
Item Name : Silicon Wafer With Nickel Plating.
Vendor : Concord.
Component Or Part No. : Silicon+Nickel.
Test Item : Cd,Pb,Hg,Cr VI,PBBs,PBDEs.
Remark : As Requested By The Applicant, Tested As A Whole And Sampled Randomly.

Tests Conducted:
As Requested By The Applicant, For Details Refer To Attached Pages

Prepared And Checked By:
For Intertek Testing Services Wuxi Ltd.

Jessica Lu
General Manager

Intertek Testing Services Wuxi Ltd.
No.8 Fuhan Road, Yuhan Economic Development Zone,
Wuxi 214101, Jiangsu, China
Tel: +86 510 8821 4567 Fax: +86 510 8821 0420 E-mail: consumer-goods.wuxi@intertek.com

Intertek

TEST REPORT Number : WUXH00005703

Tests Conducted (As Requested By The Applicant)
1. RoHS Directives Test
(A) Test Result Summary:

Testing Item	Result
Cadmium (Cd) Content (mg/kg)	ND
Lead (Pb) Content (mg/kg)	48
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI) (Cr^{6+}) Content (mg/kg)(For Non-Metal)	ND
Polybrominated Biphenyls (PBBs)(mg/kg)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)(mg/kg)	
Monobrominated Diphenyl Ethers (MonoBDE)	ND
Dibrominated Diphenyl Ethers (DiBDE)	ND
Tribrominated Diphenyl Ethers (TriBDE)	ND
Tetrabrominated Diphenyl Ethers (TetraBDE)	ND
Pentabrominated Diphenyl Ethers (PentaBDE)	ND
Hexabrominated Diphenyl Ethers (HexaBDE)	ND
Heptabrominated Diphenyl Ethers (HeptaBDE)	ND
Octabrominated Diphenyl Ethers (OctaBDE)	ND
Nonabrominated Diphenyl Ethers (NonaBDE)	ND
Decabrominated Diphenyl Ether (DecaBDE)	ND

Remark :
mg/kg = Milligram Per Kilogram = ppm
ND = Not Detected

Intertek Testing Services Wuxi Ltd.
No.8 Fuhan Road, Yuhan Economic Development Zone,
Wuxi 214101, Jiangsu, China
Tel: +86 510 8821 4567 Fax: +86 510 8821 0420 E-mail: consumer-goods.wuxi@intertek.com

Intertek

TEST REPORT Number : WUXH00005703

Tests Conducted (As Requested By The Applicant)
(B) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr^{6+})	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

The Above Limits Were Quoted From 2002/95/EC And Amendment 2005/618/EC For Homogeneous Material.

(C) Test Method:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Lead (Pb) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Mercury (Hg) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Chromium (VI) (Cr^{6+}) Content (For Non-Metal)	With Reference To IEC 62321 Edition 1.0: 2008, By Alkaline Digestion And Determined By UV-VIS Spectrophotometer	1 mg/kg
Polybrominated Biphenyls (PBBs) & Polybrominated Diphenyl Ethers (PBDEs)	With Reference To IEC IEC 62321 Edition 1.0: 2008, By Solvent Extraction And Determined By GC/MS And Further HPLC Confirmation When Necessary.	5 mg/kg

Date Sample Received: Aug 01, 2011
Testing Period: Aug 01, 2011 To Aug 04, 2011

Intertek Testing Services Wuxi Ltd.
No.8 Fuhan Road, Yuhan Economic Development Zone,
Wuxi 214101, Jiangsu, China
Tel: +86 510 8821 4567 Fax: +86 510 8821 0420 E-mail: consumer-goods.wuxi@intertek.com

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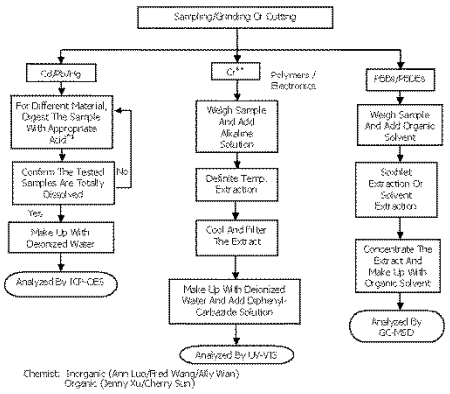
TEST REPORT Number : WUXH00005703

Tests Conducted (As Requested By The Applicant)
(D) Measurement Flowchart:
Reference Standard: IEC 62321 Edition 1.0: 2008



Chemist: Inorganic (Ann Luo/Fred Wang/Ally Wan)
Organic (Jenny Xu/Cherry Sun)

Remarks:
*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO_3,HCl,HF,H_2O_2,H_2BO_3
Metals	HNO_3,HCl,HF
Electronics	HNO_3,HCl,HNO_3,HBF_4

Intertek Testing Services Wuxi Ltd.
No.8 Fuhan Road, Yuhan Economic Development Zone,
Wuxi 214101, Jiangsu, China
Tel: +86 510 8821 4567 Fax: +86 510 8821 0420 E-mail: consumer-goods.wuxi@intertek.com

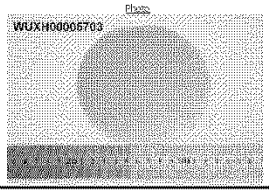
Annex 5: Analysis Result of Ni-plated Wafer (Page 5 of 5)

Intertek

TEST REPORT Number : WUXH00005703

Tests Conducted (As Requested By The Applicant)

Photo:



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No.8 Fute Road, Waigaoqiao Free Trade Zone,
Wuxi 214131, Jiangsu, China
Tel: +86 510 8821 4567 Fax: +86 510 8820 0428 E-mail: consumer.packaged@intertek.com

Annex 6: Analysis Result of Passivation Glass (Page 1-4 of 7)

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TEST REPORT Number : WUXH00005704

Applicant : CONCORD SEMICONDUCTOR (WUXI) CO., LTD.
EAST 1#,ZHENFA 6 ROAD, SHUO FANG
INDUSTRIAL PARK WUXI NATIONAL HIGH-TECH
DEVELOPMENT ZONE, WUXI, JIANGSU, CHINA
Attn : ZHANG XIAOPENG

Date : Aug 05, 2011

Sample Description As Declared:
One (1) Piece Of Submitted Sample Said To Be : **White Power.**
Item Name : Wafer Passivation.
Vendor : Propriety.
Component Or Part No. : Propriety.
Test Item : Cd/Pb,Hg,Cr(VI),PBBs,PBDEs,F,Cl,Br,I.

Tests Conducted:
As Requested By The Applicant, For Details Refer To Attached Pages

Prepared And Checked By:
For Intertek Testing Services Wuxi Ltd.

Jessica Lu
General Manager

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Intertek

TEST REPORT Number : WUXH00005704

Tests Conducted (As Requested By The Applicant)
1. RoHS Directives Test
(A) Test Result Summary:

Testing Item	Result
Cadmium (Cd) Content (mg/kg)	ND
Lead (Pb) Content (mg/kg)	185100
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI) (Cr^{6+}) Content (mg/kg)(For Non-Metal)	ND
Polybrominated Biphenyls (PBBs)(mg/kg)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)(mg/kg)	
Monobrominated Diphenyl Ethers (MonoBDE)	ND
Dibrominated Diphenyl Ethers (DiBDE)	ND
Tribrominated Diphenyl Ethers (TriBDE)	ND
Tetrabrominated Diphenyl Ethers (TetraBDE)	ND
Pentabrominated Diphenyl Ethers (PentaBDE)	ND
Hexabrominated Diphenyl Ethers (HexaBDE)	ND
Heptabrominated Diphenyl Ethers (HeptaBDE)	ND
Octabrominated Diphenyl Ethers (OctaBDE)	ND
Nonabrominated Diphenyl Ethers (NonaBDE)	ND
Decabrominated Diphenyl Ether (DecaBDE)	ND

Remark:
mg/kg = Milligram Per Kilogram = ppm
ND = Not Detected
#=The Result Is For Reference Only.

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Intertek

TEST REPORT Number : WUXH00005704

Tests Conducted (As Requested By The Applicant)
(B) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr^{6+})	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

The Above Limits Were Quoted From 2002/95/EC And Amendment 2005/618/EC For Homogeneous Material.

(C) Test Method:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Lead (Pb) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Mercury (Hg) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Chromium (VI) (Cr^{6+}) Content (For Non-Metal)	With Reference To IEC 62321 Edition 1.0: 2008, By Alkaline Digestion And Determined By UV-VIS Spectrophotometer	1 mg/kg
Polybrominated Biphenyls (PBBs) & Polybrominated Diphenyl Ethers (PBDEs)	With Reference To IEC IEC 62321 Edition 1.0: 2008, By Solvent Extraction And Determined By GC/MS And Further HPLC Confirmation When Necessary.	5 mg/kg

Date Sample Received: Aug 01, 2011
Testing Period: Aug 01, 2011 To Aug 04, 2011

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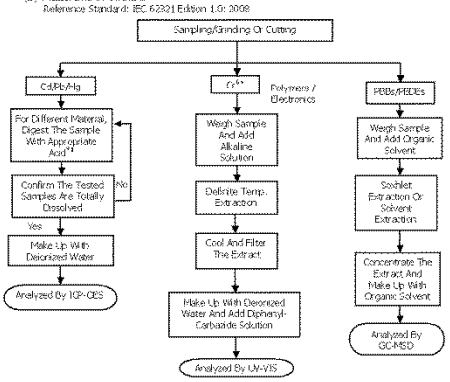
TEST REPORT Number : WUXH00005704

Tests Conducted (As Requested By The Applicant)
(D) Measurement Flowchart:
Reference Standard: IEC 62321 Edition 1.0: 2008



Chemist: Inorganic (Ann Luo/Fred Wang/Ally Wan)
Organic (Jenny Xu/Cherry Sun)

Remarks:
*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO_3,HCl, HF,H_2O_2,H_3BO_3
Metals	HNO_3,HCl,HF
Electronics	HNO_3,HCl, H_2O_2,HBF$_4$

2 Halogen Test
(I) Test Result Summary :

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Annex 6: Analysis Result of Passivation Glass (Page 5-7 of 7)

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TEST REPORT Number : WUXH00005704

Tests Conducted (As Requested By The Applicant)

Halogen Content:

Testing Item	Result (ppm)
Fluorine (F) Content	ND
Chlorine (Cl) Content	ND
Bromine (Br) Content	ND
Iodine (I) Content	ND

Remarks : ppm = Parts Per Million = mg/kg
ND = Not Detected

Date Sample Received: Aug 01, 2011
Testing Period : Aug 01, 2011 To Aug 05, 2011

(II) Test Method :

Testing Item	Testing Method	Reporting Limit
Halogen (F, Cl, Br, I) Content	With Reference To EN 14582:2007 By Combustion In A Calorimetric Bomb And Determined By Ion Chromatography	50 ppm

Remarks : Reporting Limit = Quantitation Limit Of Analyte In Sample

Intertek Testing Services Wuxi Ltd.
No.8 Fubei Road, Xishan Economic Development Zone,
Wuxi 214101, Jiangsu, China
Tel: +86 510 8821 4997 Fax: +86 510 8820 0428 E-mail: [redacted]

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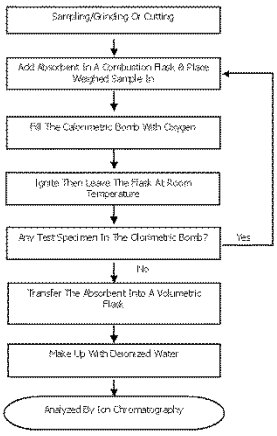
TEST REPORT Number : WUXH00005704

Tests Conducted (As Requested By The Applicant)

(III) Measurement Flowchart:

Test For Halogen Content Reference Method: EN 14582:2007



Chemist: Fred Wang/ Ally Wan Ally Wan

Intertek Testing Services Wuxi Ltd.
No.8 Fubei Road, Xishan Economic Development Zone,
Wuxi 214101, Jiangsu, China
Tel: +86 510 8821 4997 Fax: +86 510 8820 0428 E-mail: [redacted]

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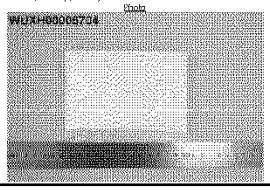
TEST REPORT Number : WUXH00005704

Tests Conducted (As Requested By The Applicant)

Photo



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No.8 Fubei Road, Xishan Economic Development Zone,
Wuxi 214101, Jiangsu, China
Tel: +86 510 8821 4997 Fax: +86 510 8820 0428 E-mail: [redacted]

Annex 7: Analysis Result of Die Bonding Solder (Page 1-4 of 5)

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Test Report No: 102529976(S) Date: 17-Nov-11 Page 1 of 5

Heraeus Materials Singapore Pte Ltd
No. 2 Corporation Road, #06-15/16/17 Corporation Place, Singapore 618494

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

Sample Description : PbSn5-P3-DA464-0 Solder Paste

Sample Receiving Date : 11-Nov-11
Testing Period : 11-Nov-11 to 17-Nov-11

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

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

Conclusion : Based on the performed tests on submitted sample(s), the results **comply with** the RoHS Directive 2011/65/EU Annex II, amending 2002/95/EC

Signed for and on behalf of
SGS Testing & Control Services Singapore Pte Ltd

YC Tham
Laboratory Manager

Test Location: 26 Ayer Rajah Crescent, #07-08, Singapore 139944
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Test Report No: 102529976(S) Date: 17-Nov-11 Page 2 of 5

Test Result(s):

Sample Description : PbSn5-P3-DA464-0 Solder Paste

Test Item(s):	Unit	Method	Results	MDL	RoHS Limit
Cadmium(Cd)	mg/kg	With reference to IEC62321, Ed1.2008, Analysis was performed by ICP/AES	n.d.	2	100
Lead (Pb)	mg/kg	With reference to IEC62321, Ed1.2008, Analysis was performed by ICP/AES	949227.4	2	1000
Mercury (Hg)	mg/kg	With reference to IEC62321, Ed1.2008, Analysis was performed by ICP/AES	n.d.	2	1000
Hexavalent Chromium (CrVI)	mg/kg	With reference to IEC62321, Ed1.2008, Analysis was performed by UV-Vis Spectrometry	n.d.	2	1000
Sum of PBBs	mg/kg	With reference to IEC62321, Ed1.2008, Analysis was performed by GC-MS	n.d.	-	1000
Monobromobiphenyl	mg/kg		n.d.	5	-
Dibromobiphenyl	mg/kg		n.d.	5	-
Tribromobiphenyl	mg/kg		n.d.	5	-
Tetrabromobiphenyl	mg/kg		n.d.	5	-
Pentabromobiphenyl	mg/kg		n.d.	5	-
Hexabromobiphenyl	mg/kg		n.d.	5	-
Heptabromobiphenyl	mg/kg		n.d.	5	-
Octabromobiphenyl	mg/kg		n.d.	5	-
Nonabromobiphenyl	mg/kg		n.d.	5	-
Decabromobiphenyl	mg/kg		n.d.	5	-
Sum of PBDEs	mg/kg		n.d.	-	1000
Monobromodiphenyl ether	mg/kg		n.d.	5	-
Dibromodiphenyl ether	mg/kg		n.d.	5	-
Tribromodiphenyl ether	mg/kg		n.d.	5	-
Tetrabromodiphenyl ether	mg/kg		n.d.	5	-
Pentabromodiphenyl ether	mg/kg		n.d.	5	-
Hexabromodiphenyl ether	mg/kg		n.d.	5	-
Heptabromodiphenyl ether	mg/kg		n.d.	5	-
Octabromodiphenyl ether	mg/kg		n.d.	5	-
Nonabromodiphenyl ether	mg/kg		n.d.	5	-
Decabromodiphenyl ether #6	mg/kg		n.d.	5	-

Test Location: 26 Ayer Rajah Crescent, #07-08, Singapore 139944
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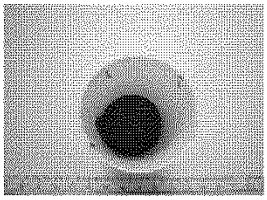
Test Report No: 102529976(S) Date: 17-Nov-11 Page 3 of 5

Note: (1) mg/kg = ppm ; 0.1wt% = 1000ppm
(2) n.d. = Not Detected
(3) MDL = Method Detection Limit
(4) ## = The exemption of DecaBDE in polymeric application according 2005/717/EC was overruled by the European Court of Justice by its decision of 01.04.2008. Subsequently DecaBDE will be included in the sum of PBDE after 01.07.2008
(5) "-" = Not regulated
(6) "*" : Exceeds limit

"Exemption: The received sample is exempted under directive 2011/65/EC Annex Article 7(a): lead in hi melting temperature solder type solders (i.e. tin-lead solder alloys containing more than 85% of lead).
Lab Analyst: Jay, Jojo and Eileen
Remarks: Sample received was totally dissolved by preconditioning method.

Sample photo:
Sample Description : PbSn5-P3-DA464-0 Solder Paste

SGS authenticate the photo on original report only



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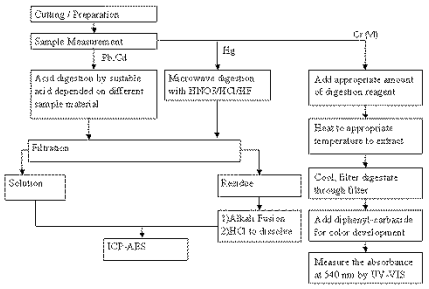
Test Report No: 102529976(S) Date: 17-Nov-11 Page 4 of 5

Process Flow of IEC 62321 (Pb, Cd, Hg & Cr^{6+})



Remarks: Sample received was totally dissolved by preconditioning method. (CrVI method excluded)

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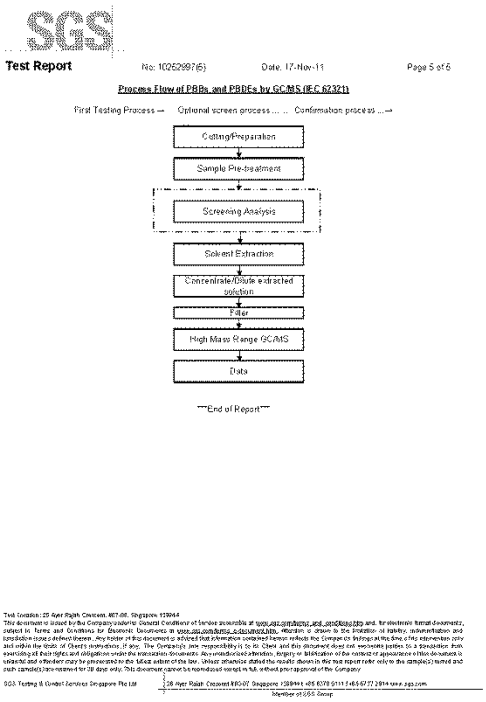
Annex 7: Analysis Result of Die Bonding Solder (Page 5 of 5)



Test Report No: 1025299765 Date: 17-Nov-11 Page 5 of 6

Process Flow of PBBs and PBDEs by GC/MS (IEC 62321)

First Testing Process → Optional screen process ... ... Confirmation process ...→

Cutting/Preparation

Sample Pre-treatment

Screening Analysis

Solvent Extraction

Concentrate/Dilute extracted solution

Filter

High Mass Range GC/MS

Data

"End of Report"

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Annex 8: Applicable RoHS exemptions (2011/65/EU Annex III)

	Exemption	Scope and dates of applicability
6(a)	Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight	
6(b)	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	
6(c)	Copper alloy containing up to 4 % lead by weight	
7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	
7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	
7(c)-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound	
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	
7(c)-III	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
8(a)	Cadmium and its compounds in one shot pellet type thermal cut-offs	Expires on 1 January 2012 and after that date may be used in spare parts for EEE placed on the market before 1 January 2012
8(b)	Cadmium and its compounds in electrical contacts	
9	Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0,75 % by weight in the cooling solution	
9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	
11(a)	Lead used in C-press compliant pin connector systems	May be used in spare parts for EEE placed on the market before 24 September 2010
11(b)	Lead used in other than C-press compliant pin connector systems	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
12	Lead as a coating material for the thermal conduction module C-ring	May be used in spare parts for EEE placed on the market before 24 September 2010
13(a)	Lead in white glasses used for optical applications	
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	
14	Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight	Expired on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011