

## Certificate of non-use of The Controlled Substances

Company name            Littelfuse, Inc

Product Covered        SIDACtor<sup>®</sup> & SIDAC DO-15 Package

Issue Date              March 11, 2014

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.

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:   
JORDANUFF H. CABILAN

\_\_\_\_\_  
[Global EH&S Engineer]

(1) Parts, sub-materials and unit parts

This document covers SIDACtor DO-15 Package products (T10A series, PxxxxGAL/GBL/VEAL/VEBL series) and SIDAC DO-15 package (KxxxxG series), manufactured by Littelfuse Wuxi plant. Please see page 2 for the complete list of part number covered by this report.

< Homogeneous Materials used >

Please see figure and table 1 on page 3 and table 2 on page 4 of this document.

(2) The analytical data on all measurable substances

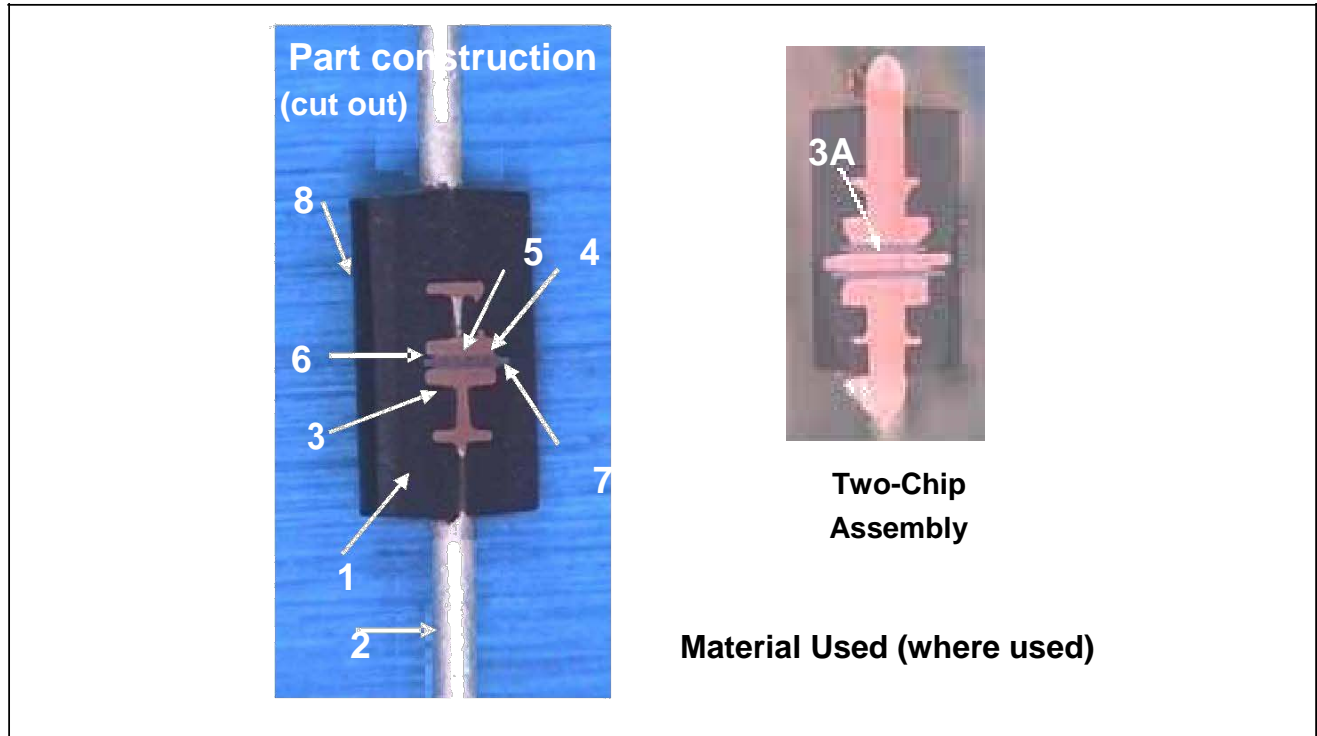
Please see annex 1 through 7, attached to this document

Remarks :

- 1. Pb (lead) contained in die bonding solder (item 4 on page 3) and passivation glass (item 7) to be categorized as exempt in RoHS Annex III 7(a) and 7(c)-I.**
- 2. 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**

Standard (Catalog) Part Number			
K0900G	P3100GAL	T10A180E-007	P1102GBL
K1050G	P3500GAL	T10A180E-009	P1302GBL
K1100G	P1100GBL	T10A180E-010	P1502GBL
K1120G	P1300GBL	T10A180E-B	P1802GBL
K1200G	P1500GBL	T10A180E-T	P2302GBL
K1300G	P1800GBL	T10A200	P2602GBL
K1400G	P2300GBL	T10A200E-005	P3002GBL
K1500G	P2600GBL	T10A220	P3502GBL
K1800G	P3100GBL	T10A220B	P4500GCL
K2000G	P3500GBL	T10A220E	
K2000GH		T10A220E-T	
K2000GHU		T10A240	
K2200G	T10A060B	T10A270	
K2200GH	T10A060E	T10A270B	
K2200GHU	T10A062	T10A270E	
K2300G	T10A068	T10A270E-T	
K2300GH	T10A080B	T10A270-B01	
K2300GHU	T10A080B-B	T10A270B-B01	<b>Special Device</b>
K2400G	T10A080B-T	T10A270E-B01	<b>Part Number</b>
K2400GH	T10A080E		Any Part Number which has base part number listed in this table
K2400GHU	T10A100		
K2500G	T10A110B	<b>Two-Chip Assembly</b>	
K2500GH	T10A110E		
K2500GHU	T10A120	K2002G	
	T10A130	K2201G	<b>Optional Suffix</b>
P3100VEBL	T10A140B	K2202G	
	T10A140E	K2401G	Part number in this table, including the special device part number, <b>may be followed by "RP", denoting reel pack or "AP" denoting Ammo Pack.</b>
P1100GAL	T10A140E-B	K2402G	
P1300GAL	T10A140E-T	K2501G	
P1500GAL	T10A180	K2502G	
P1800GAL	T10A180B	K3002G	
P2300GAL	T10A180E	K3601G	
P2600GAL	T10A180E-004		


**Table 1: Homogeneous Material Used**

#	Description	Name of Material	Type	Page
1	Molding compound	epoxy resin	EME-1100RG	4-12
2	Lead finish	matte-tin	metal	13-16
3	Lead frame (Axial Lead)	copper alloy	metal	17-20
3A	Copper spacer	copper alloy	metal	21-24
4	Die bonding solder	solder	metal	25-31
5	Silicon die	Silicon	metal	32-36
6	Nickel electrode	Nickel	metal	
7	Passivation glass	Glass	glass	37-43
8	Marking Ink	plastic	plastic	44-54



Number : WUXH00016525

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, 2013

Sample Description As Declared:

One (1) Piece Of Submitted Sample Said To Be : **Grey Epoxy Molding Compound.**  
Item Name : Epoxy Molding Compound.  
Vendor : Chang Chun Sb (Chang Shu) Co., Ltd.  
Component Or Part No. : EME-1100RG.  
Test Item : Cd,Pb,Hg,CrVI,PBBs,PBDEs,Phthalate,HBCDD,Sb.

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

Conclusion:

<u>Tested Sample</u>	<u>Standard</u>	<u>Result</u>
Submitted Sample	With Reference To Test Method Of IEC 62321 Edition 1.0: 2008 And Maximum Concentration Limits Quoted From RoHS Directive 2011/65/EU.	Pass

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

Jessica Lu  
General Manager





Number : WUXH00016525

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)	ND
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI) (Cr <sup>6+</sup> ) 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
Sum Of PBBs	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
Sum Of PBDEs	ND

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

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 <sup>6+</sup> )	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 RoHS Directive 2011/65/EU 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 Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Lead (Pb)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Mercury (Hg)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Chromium (VI) (Cr <sup>6+</sup> ) 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 62321 Edition 1.0: 2008, By Solvent Extraction And Determined By GC/MS And Further HPLC Confirmation When Necessary.	5 mg/kg

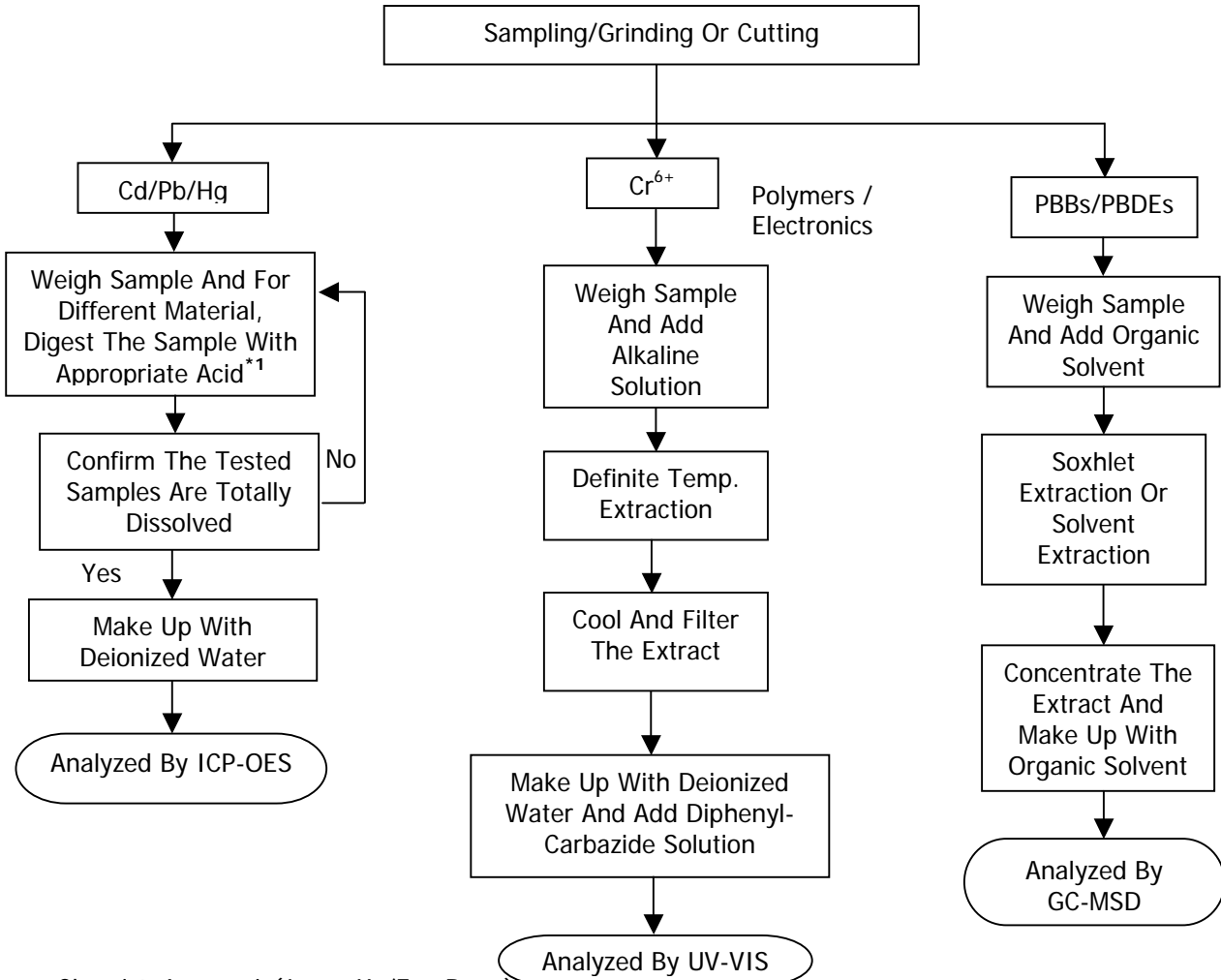
Date Sample Received: Jul 30, 2013

Testing Period: Jul 30 2013 To Aug 02, 2013

Tests Conducted (As Requested By The Applicant)

(D) Measurement Flowchart:

Reference Standard: IEC 62321 Edition 1.0: 2008



Chemist: Inorganic(Jenny Xu/Eve Deng)  
Organic (April Zang/Zoe Zhang)

Remarks:

\*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub>
Metals	HNO <sub>3</sub> , HCl, HF
Electronics	HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>



Number : WUXH00016525

Tests Conducted (As Requested By The Applicant)

2 Total Antimony (Sb) Content

As Per Client's Request, Acid Digestion Method Was Used And Total Antimony (Sb) Content Was Determined By Inductively Coupled Argon Plasma Spectrometry.

Result In ppm  
908

ppm = Parts Per Million =mg/kg

Date Sample Received : Jul 30, 2013  
Testing Period : Jul 30, 2013 To Aug 02, 2013

3 Phthalate Content Test

With Reference To EN14372, By Gas Chromatographic-Mass Spectrometric (GC-MSD) Analysis.

<u>Tested Compound</u>	<u>Result (%W/W)</u>
Dibutyl Phthalate (DBP)	ND
Diethyl Hexyl Phthalate(DEHP)	ND
Benzyl Butyl Phthalate (BBP)	ND
Di-isobutyl phthalate(DIBP)	ND
Di-Iso-Nonyl Phthalate (DINP)	ND
Di-N-Octyl Phthalate (DNOP)	ND
Di-Iso-Decyl Phthalate (DIDP)	ND

Detection Limit = 0.01%(W/W)  
ND = Not Detected

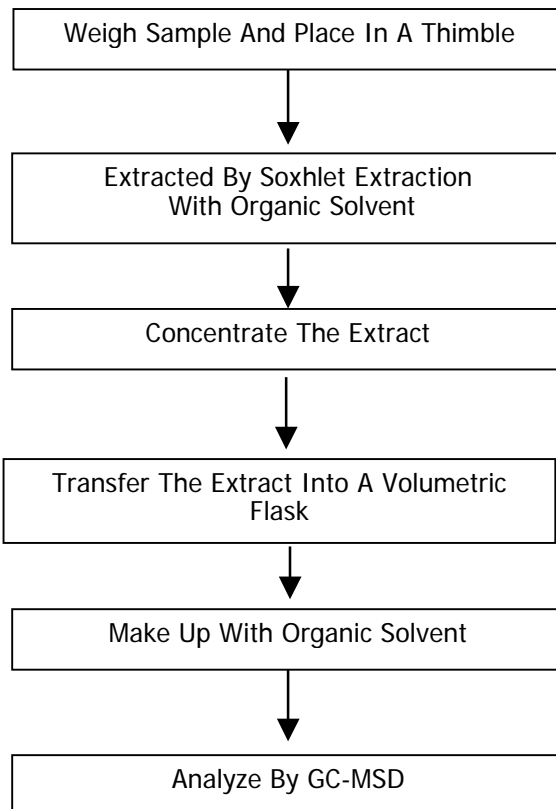
Date Sample Received : Jul 30, 2013  
Testing Period : Jul 30, 2013 To Aug 02, 2013

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Tests Conducted (As Requested By The Applicant)  
Measurement Flowchart:

Test For Phthalates Contents



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

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Number : WUXH00016525

Tests Conducted (As Requested By The Applicant)

4 HBCDD (Hexabromocyclododecane)

(A) Test Result Summary:

<u>Testing Item</u>	<u>Result(ppm)</u>
HBCDD (Hexabromocyclododecane)	ND

Remarks:

ppm = Parts Per Million = mg/kg

ND = Not Detected

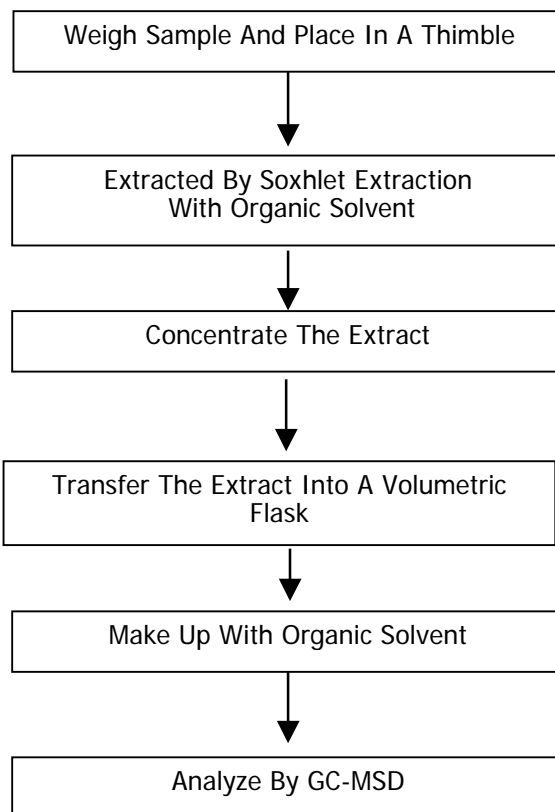
(B) Test Method :

<u>Testing Item</u>	<u>Testing Method</u>	<u>Reporting Limit</u>
HBCDD (Hexabromocyclododecane)	With Reference To US EPA 3540C, By Solvent Extraction And Determined By GC-MSD	10 ppm

Date Sample Received : Jul 30, 2013

Testing Period : Jul 30, 2013 To Aug 02, 2013

Tests Conducted (As Requested By The Applicant)  
Measurement Flowchart:  
Test For HBCDD (Hexabromocyclododecane) Content



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

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Tests Conducted (As Requested By The Applicant)

Photo



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Number : WUXH00016535

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 02, 2013

Sample Description As Declared:

One (1) Piece Of Submitted Sample Said To Be : **Black Plastic With Silvery Metal Pin.**  
Item Name : Tin Plating(Axial).  
Vendor : Shanghai Shuoye Electronic Technology Co., Ltd.  
Component Or Part No. : Pure Matte Tin.  
Test Item : Cd,Pb,Hg,CrVI.

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





Number : WUXH00016535

Tests Conducted (As Requested By The Applicant)

1 (A) Test Result Of RoHS Directive:

<b>Testing Item</b>	<b>Result (1)</b>
Cadmium (Cd) Content (mg/kg)/Plating	ND
Lead (Pb) Content (mg/kg)/Plating	89
Mercury (Hg) Content (mg/kg)/Plating	ND
Chromium (VI)(Cr <sup>6+</sup> ) Result (By Boiling Water Extraction On Metal) (mg/kg With 50cm <sup>2</sup> )	N

Remark: mg/kg With 50cm<sup>2</sup> = Milligram Per Kilogram With 50 Square Centimeter  
 mg/kg = Milligram Per Kilogram = ppm  
 ND = Not Detected  
 N = Negative  
 The Result Is For Reference Only.

Tested Component:(1) Metal Pin Plating.

(B) RoHS Requirement:

<b>Restricted Substances</b>	<b>Limits</b>
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr <sup>6+</sup> )	0.1% (1000 mg/kg)

The Above Limits Were Quoted From Rohs Directive 2011/65/EU For Homogeneous Material.

(C) Test Method:

<b>Testing Item</b>	<b>Testing Method</b>	<b>Reporting Limit</b>
Cadmium (Cd) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Lead (Pb) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Mercury (Hg) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Chromium (VI) (Cr <sup>6+</sup> ) 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 50cm <sup>2</sup> (In Testing Solution)

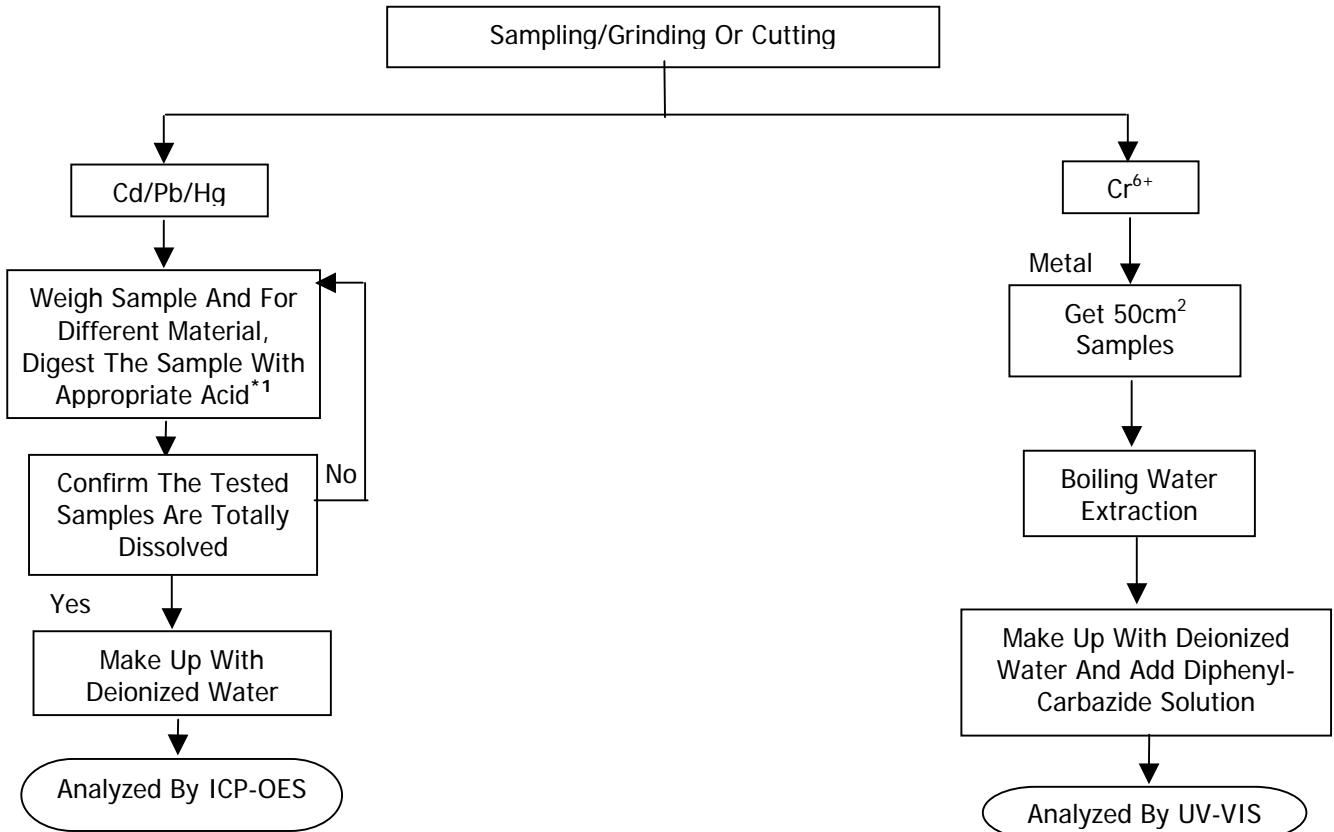
Date Sample Received: Jul 30, 2013

Testing Period: Jul 30, 2013 To Aug 01, 2013

Tests Conducted (As Requested By The Applicant)

(D) Measurement Flowchart:

Reference Standard: IEC 62321 Edition 1.0: 2008



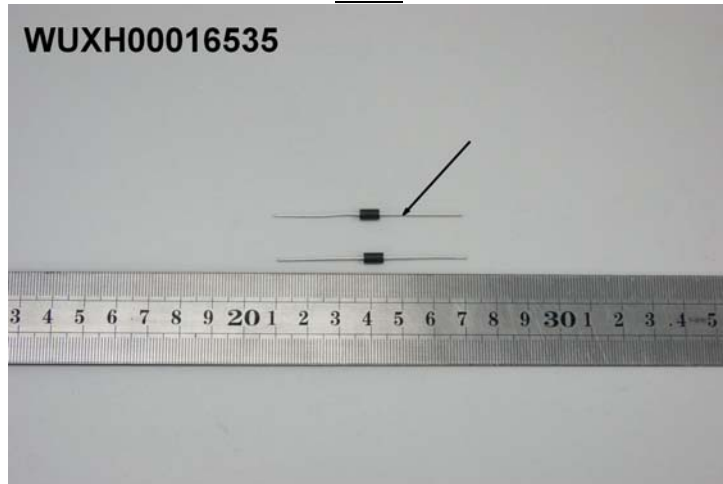
Remarks:

\*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub>
Metals	HNO <sub>3</sub> , HCl, HF
Electronics	HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>

Tests Conducted (As Requested By The Applicant)

Photo



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Number : WUXH00016498

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 02, 2013

Sample Description As Declared:

One (1) Piece Of Submitted Sample Said To Be : **Copper Metal.**  
Item Name : Lead Wire.  
Vendor : Shanghai Bontech Enterprise.  
Component Or Part No. : Alloy Copper.  
Test Item : Cd, Pb, Hg, CrVI.

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

Conclusion:

<u>Tested Sample</u>	<u>Standard</u>	<u>Result</u>
Submitted Sample	With Reference To Test Method Of IEC 62321 Edition 1.0: 2008 And Maximum Concentration Limits Quoted From RoHS Directive 2011/65/EU.	Pass

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

Jessica Lu  
General Manager



Tests Conducted (As Requested By The Applicant)

1 (A) Test Result Of RoHS Directive:

<b>Testing Item</b>	<b>Result</b>
Cadmium (Cd) Content (mg/kg)	ND
Lead (Pb) Content (mg/kg)	ND
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI)(Cr <sup>6+</sup> ) Result (By Boiling Water Extraction On Metal) (mg/kg With 50cm <sup>2</sup> )	N

Remark: mg/kg With 50cm<sup>2</sup> = Milligram Per Kilogram With 50 Square Centimeter  
 mg/kg = Milligram Per Kilogram = ppm  
 ND = Not Detected  
 N = Negative

(B) RoHS Requirement:

<b>Restricted Substances</b>	<b>Limits</b>
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr <sup>6+</sup> )	0.1% (1000 mg/kg)

The Above Limits Were Quoted From Rohs Directive 2011/65/EU For Homogeneous Material.

(C) Test Method:

<b>Testing Item</b>	<b>Testing Method</b>	<b>Reporting Limit</b>
Cadmium (Cd) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Lead (Pb) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Mercury (Hg) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Chromium (VI) (Cr <sup>6+</sup> ) 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 50cm <sup>2</sup> (In Testing Solution)

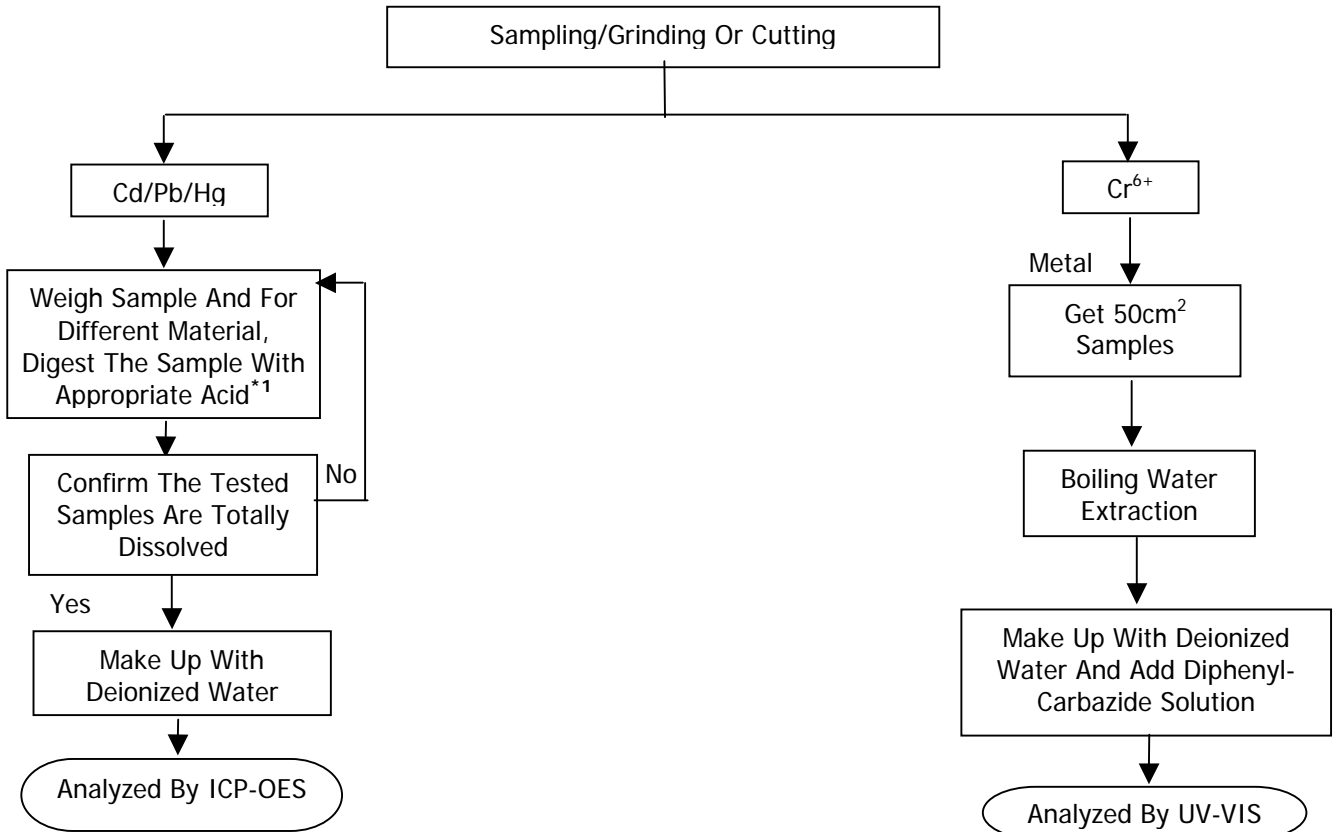
Date Sample Received: Jul 30, 2013

Testing Period: Jul 30, 2013 To Aug 01, 2013

Tests Conducted (As Requested By The Applicant)

(D) Measurement Flowchart:

Reference Standard: IEC 62321 Edition 1.0: 2008



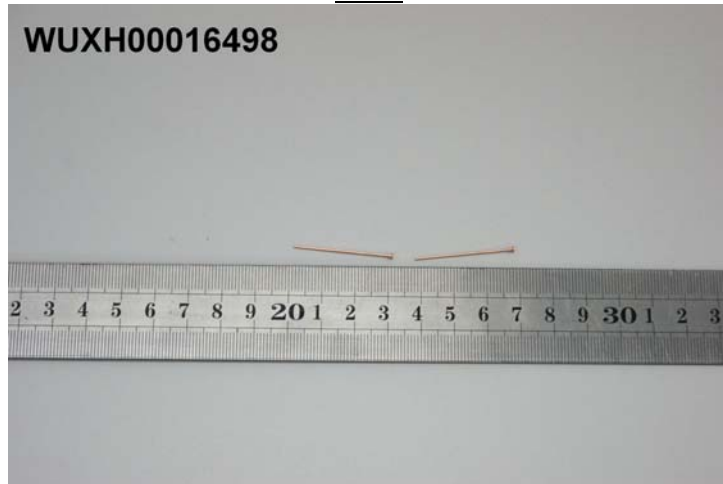
Remarks:

\*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub>
Metals	HNO <sub>3</sub> , HCl, HF
Electronics	HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>

Tests Conducted (As Requested By The Applicant)

Photo



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Number : WUXH00016506

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 02, 2013

Sample Description As Declared:

One (1) Piece Of Submitted Sample Said To Be : **Copper Metal.**  
Item Name : Copper Spacer.  
Vendor : Mou Ih Metal Preform Co., Ltd.  
Component Or Part No. : Copper.  
Test Item : Cd,Pb,Hg,CrVI.

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

Conclusion:

<u>Tested Sample</u>	<u>Standard</u>	<u>Result</u>
Submitted Sample	With Reference To Test Method Of IEC 62321 Edition 1.0: 2008 And Maximum Concentration Limits Quoted From RoHS Directive 2011/65/EU.	Pass

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

Jessica Lu  
General Manager



Tests Conducted (As Requested By The Applicant)

1 (A) Test Result Of RoHS Directive:

<b>Testing Item</b>	<b>Result</b>
Cadmium (Cd) Content (mg/kg)	ND
Lead (Pb) Content (mg/kg)	ND
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI)(Cr <sup>6+</sup> ) Result (By Boiling Water Extraction On Metal) (mg/kg With 50cm <sup>2</sup> )	N

Remark: mg/kg With 50cm<sup>2</sup> = Milligram Per Kilogram With 50 Square Centimeter  
 mg/kg = Milligram Per Kilogram = ppm  
 ND = Not Detected  
 N = Negative

(B) RoHS Requirement:

<b>Restricted Substances</b>	<b>Limits</b>
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr <sup>6+</sup> )	0.1% (1000 mg/kg)

The Above Limits Were Quoted From Rohs Directive 2011/65/EU For Homogeneous Material.

(C) Test Method:

<b>Testing Item</b>	<b>Testing Method</b>	<b>Reporting Limit</b>
Cadmium (Cd) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Lead (Pb) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Mercury (Hg) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Chromium (VI) (Cr <sup>6+</sup> ) 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 50cm <sup>2</sup> (In Testing Solution)

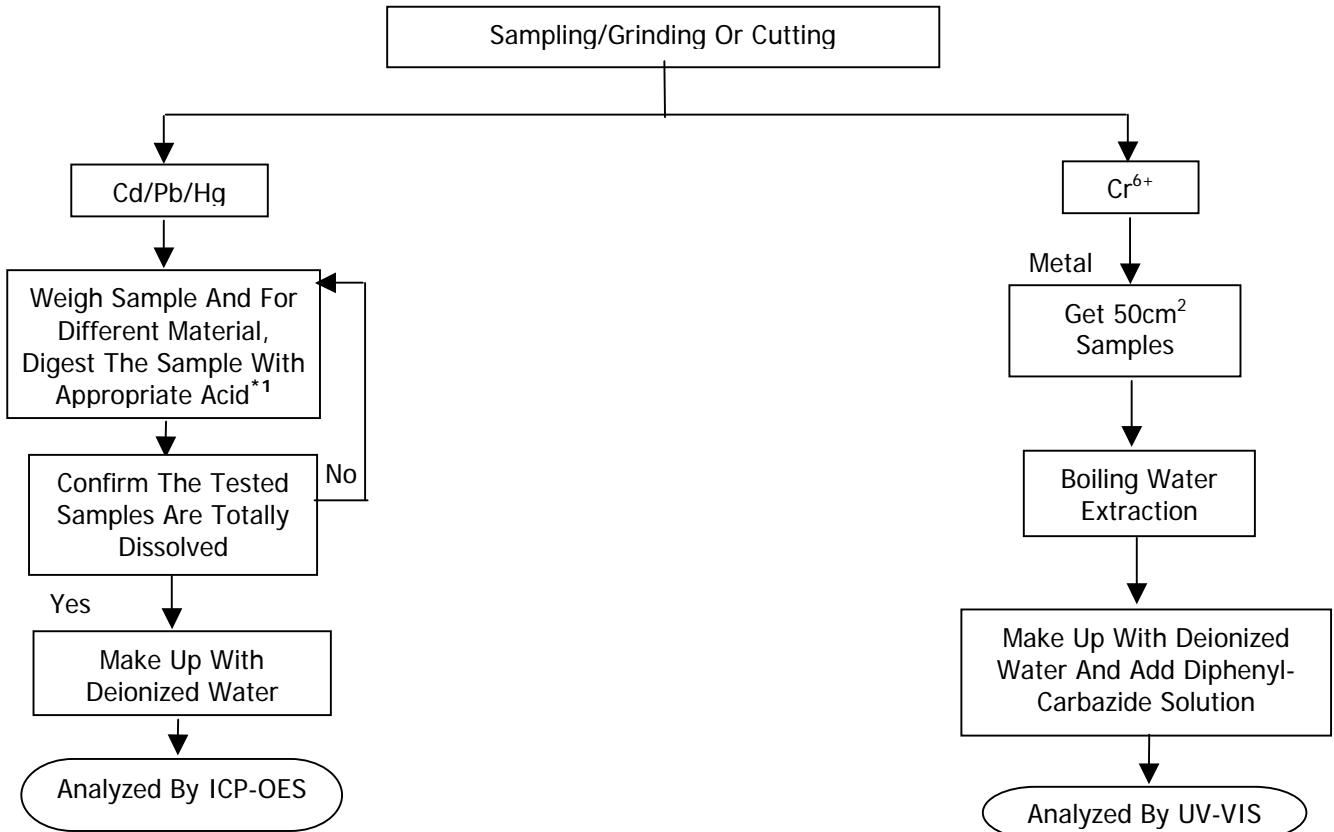
Date Sample Received: Jul 30, 2013

Testing Period: Jul 30, 2013 To Aug 01, 2013

Tests Conducted (As Requested By The Applicant)

(D) Measurement Flowchart:

Reference Standard: IEC 62321 Edition 1.0: 2008



Remarks:

\*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub>
Metals	HNO <sub>3</sub> , HCl, HF
Electronics	HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>

Tests Conducted (As Requested By The Applicant)

Photo



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Number : WUXH00016509

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, 2013

Sample Description As Declared:

One (1) Piece Of Submitted Sample Said To Be : **Silvery Solder Wafer.**

Item Name : Solder Wafer.  
Vendor : Coining Inc.  
Component Or Part No. : Pb:Sn:Ag=92.5:5:2.5.  
Test Item : Cd,Pb,Hg,CrVI,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





Number : WUXH00016509

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)	927100
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI)(Cr <sup>6+</sup> ) Result (By Boiling Water Extraction On Metal) (mg/kg With 50cm <sup>2</sup> )	N
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
Sum Of PBBs	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
Sum Of PBDEs	ND

Remark:

mg/kg = Milligram Per Kilogram = ppm

mg/kg With 50cm<sup>2</sup> = Milligram Per Kilogram With 50 Square Centimeter

ND = Not Detected

N=Negative



Number : WUXH00016509

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 <sup>6+</sup> )	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 RoHS Directive 2011/65/EU 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 Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Lead (Pb) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Mercury (Hg) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Chromium (VI) (Cr <sup>6+</sup> ) 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 50cm <sup>2</sup> (In Testing Solution)
Polybrominated Biphenyls (PBBs)& Polybrominated Diphenyl Ethers (PBDEs)	With Reference To IEC 62321 Edition 1.0: 2008, By Solvent Extraction And Determined By GC/MS And Further HPLC Confirmation When Necessary.	5 mg/kg

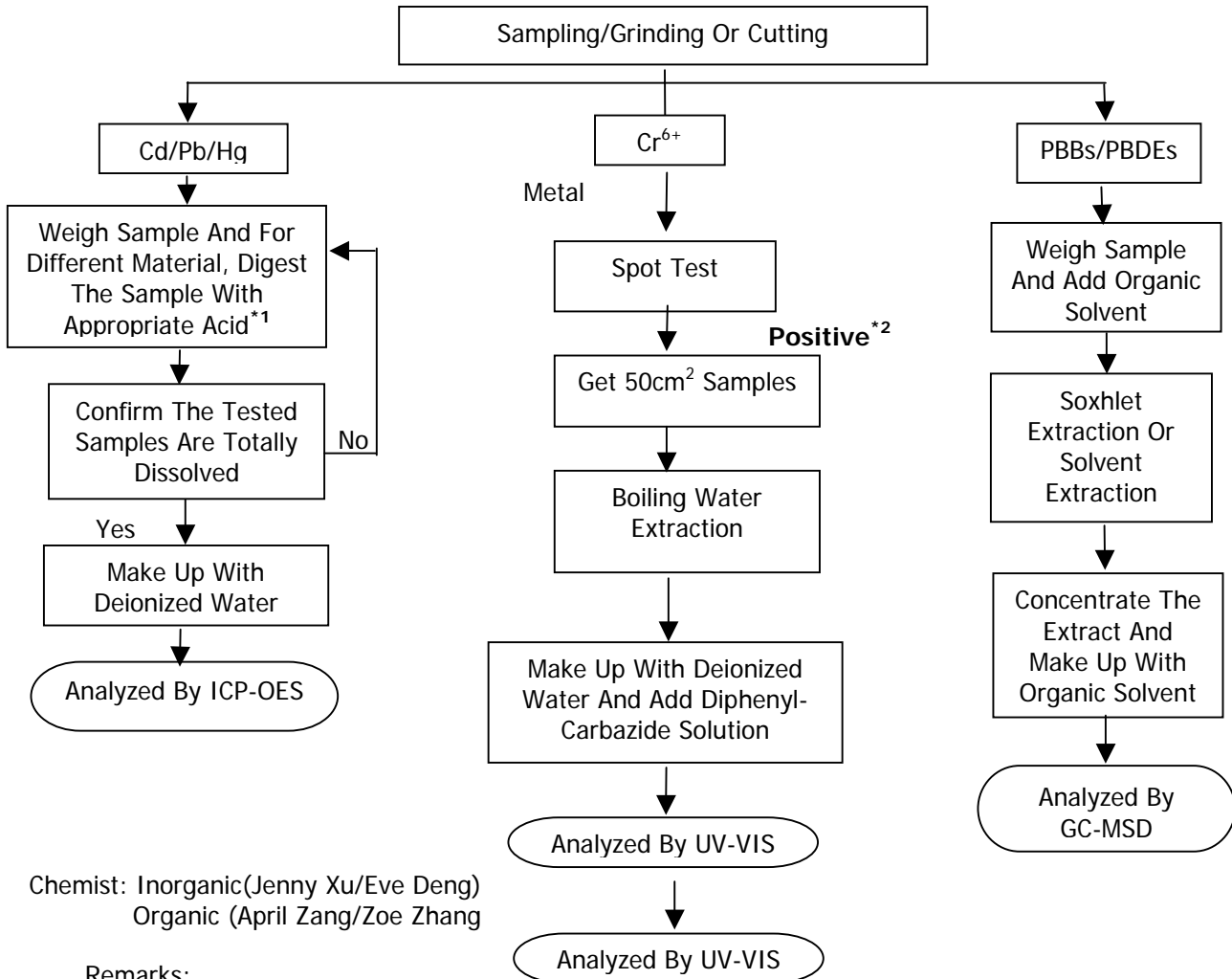
Date Sample Received: Jul 30, 2013

Testing Period: Jul 30, 2013 To Aug 01, 2013

Tests Conducted (As Requested By The Applicant)

(D) Measurement Flowchart:

Reference Standard: IEC 62321 Edition 1.0: 2008



Chemist: Inorganic(Jenny Xu/Eve Deng)  
Organic (April Zang/Zoe Zhang)

Remarks:

\*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub>
Metals	HNO <sub>3</sub> , HCl, HF
Electronics	HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>

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



Number : WUXH00016509

Tests Conducted (As Requested By The Applicant)

2 Halogen Test

(I) Test Result Summary :

Halogen Content:

<u>Testing Item</u>	<u>Result (ppm)</u>
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: Jul 30, 2013

Testing Period: Jul 30 2013 To Jul 31, 2013

(II) Test Method :

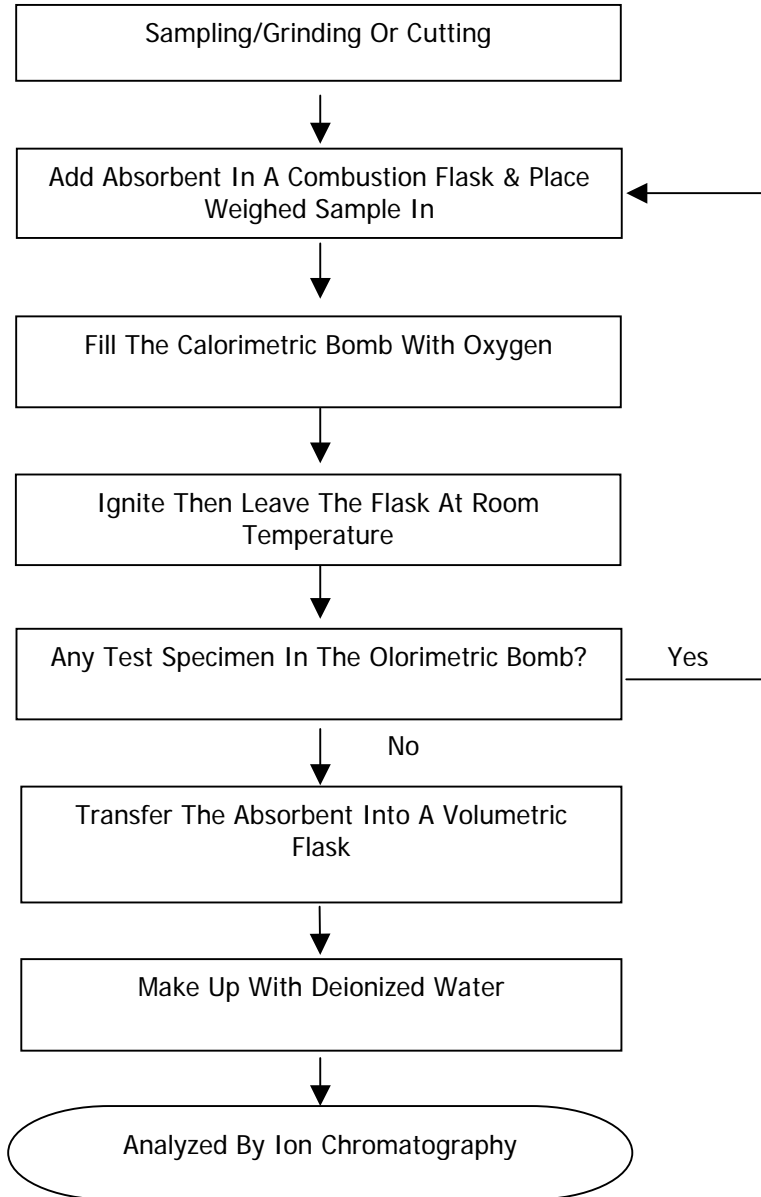
<u>Testing Item</u>	<u>Testing Method</u>	<u>Reporting Limit</u>
Halogen (F,Cl, Br,I) Content	With Reference To EN 14582:2007 By Combustion In A Calorimetric Bomb And Determined By Ion Chromatography	50 ppm

Remarks : Reporting Limit = Quantitation Limit Of Analyte In Sample

Tests Conducted (As Requested By The Applicant)

(III) Measurement Flowchart:

Test For Halogen Content Reference Method: EN 14582:2007



Chemist: Eve Deng

Tests Conducted (As Requested By The Applicant)

Photo



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Number : WUXH00016496

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 01, 2013

Sample Description As Declared:

One (1) Piece Of Submitted Sample Said To Be : **Silvery Grey Metal.**  
Item Name : Silicon Wafer With Nickel Plating.  
Vendor : Littelfuse.  
Component Or Part No. : Silicon+Nickel.  
Test Item : Cd,Pb,Hg,CrVI,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







Number : WUXH00016496

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)	25
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI)(Cr <sup>6+</sup> ) Result (By Boiling Water Extraction On Metal) (mg/kg With 50cm <sup>2</sup> )	N
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
Sum Of PBBs	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
Sum Of PBDEs	ND

Remark:

mg/kg = Milligram Per Kilogram = ppm

mg/kg With 50cm<sup>2</sup> = Milligram Per Kilogram With 50 Square Centimeter

ND = Not Detected

N=Negative



Number : WUXH00016496

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 <sup>6+</sup> )	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 RoHS Directive 2011/65/EU 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 Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Lead (Pb) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Mercury (Hg) Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Chromium (VI) (Cr <sup>6+</sup> ) 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 50cm <sup>2</sup> (In Testing Solution)
Polybrominated Biphenyls (PBBs) & Polybrominated Diphenyl Ethers (PBDEs)	With Reference To IEC 62321 Edition 1.0: 2008, By Solvent Extraction And Determined By GC/MS And Further HPLC Confirmation When Necessary.	5 mg/kg

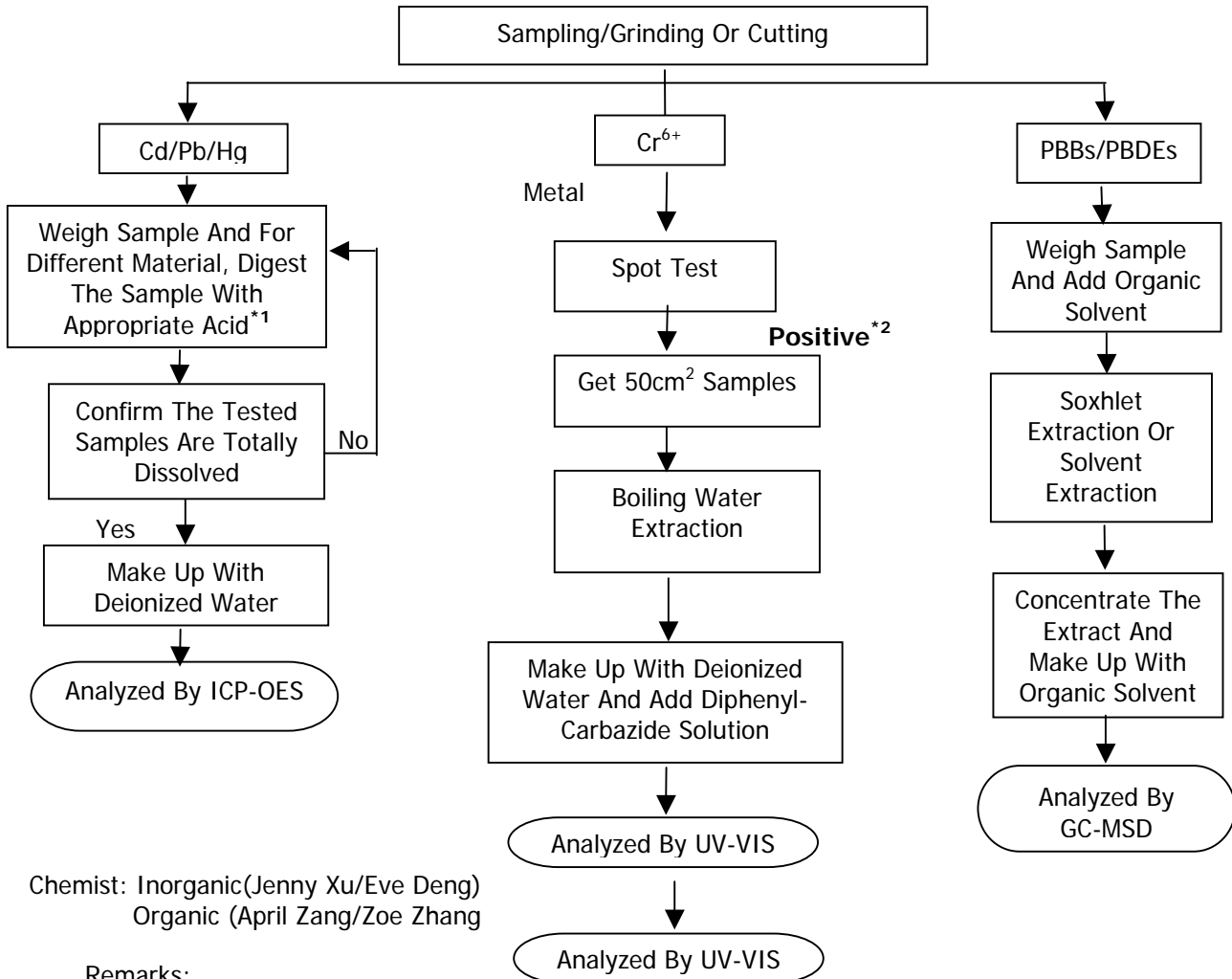
Date Sample Received: Jul 30, 2013

Testing Period: Jul 30, 2013 To Aug 01, 2013

Tests Conducted (As Requested By The Applicant)

(D) Measurement Flowchart:

Reference Standard: IEC 62321 Edition 1.0: 2008



Chemist: Inorganic(Jenny Xu/Eve Deng)  
Organic (April Zang/Zoe Zhang)

Remarks:

\*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO <sub>3</sub> ,HCl,HF,H <sub>2</sub> O <sub>2</sub> ,H <sub>3</sub> BO <sub>3</sub>
Metals	HNO <sub>3</sub> ,HCl,HF
Electronics	HNO <sub>3</sub> ,HCl,H <sub>2</sub> O <sub>2</sub> ,HBF <sub>4</sub>

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

## Tests Conducted (As Requested By The Applicant)

Photo



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Number : WUXH00016497

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 01, 2013

Sample Description As Declared:

One (1) Piece Of Submitted Sample Said To Be : **White Powder.**  
Item Name : Wafer Passivation (Glass).  
Vendor : Propriety.  
Component Or Part No. : Propriety.  
Test Item : Cd,Pb,Hg,CrVI,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





Number : WUXH00016497

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)	312500
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI) (Cr <sup>6+</sup> ) 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
Sum Of PBBs	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
Sum Of PBDEs	ND

Remark:

mg/kg = Milligram Per Kilogram = ppm

ND = Not Detected



Number : WUXH00016497

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 <sup>6+</sup> )	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 RoHS Directive 2011/65/EU 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 Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Lead (Pb)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Mercury (Hg)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Chromium (VI) (Cr <sup>6+</sup> ) 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 62321 Edition 1.0: 2008, By Solvent Extraction And Determined By GC/MS And Further HPLC Confirmation When Necessary.	5 mg/kg

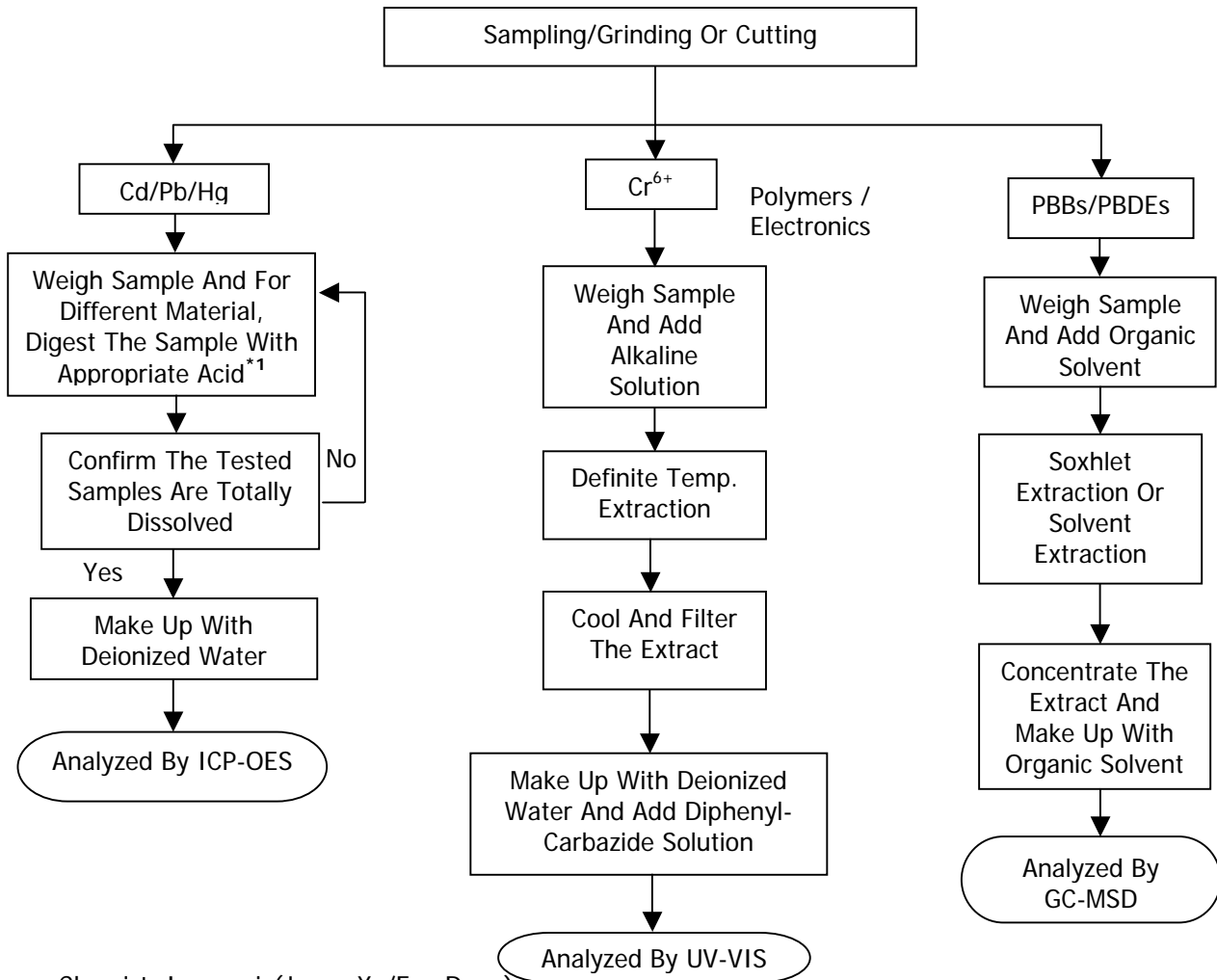
Date Sample Received: Jul 30, 2013

Testing Period: Jul 30 2013 To Jul 31, 2013

Tests Conducted (As Requested By The Applicant)

(D) Measurement Flowchart:

Reference Standard: IEC 62321 Edition 1.0: 2008



Chemist: Inorganic(Jenny Xu/Eve Deng)  
Organic (April Zang/Zoe Zhang)

Remarks:

\*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub>
Metals	HNO <sub>3</sub> , HCl, HF
Electronics	HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>





Number : WUXH00016497

Tests Conducted (As Requested By The Applicant)

2 Halogen Test

(I) Test Result Summary :

Halogen Content:

<u>Testing Item</u>	<u>Result (ppm)</u>
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: Jul 30, 2013

Testing Period: Jul 30 2013 To Jul 31, 2013

(II) Test Method :

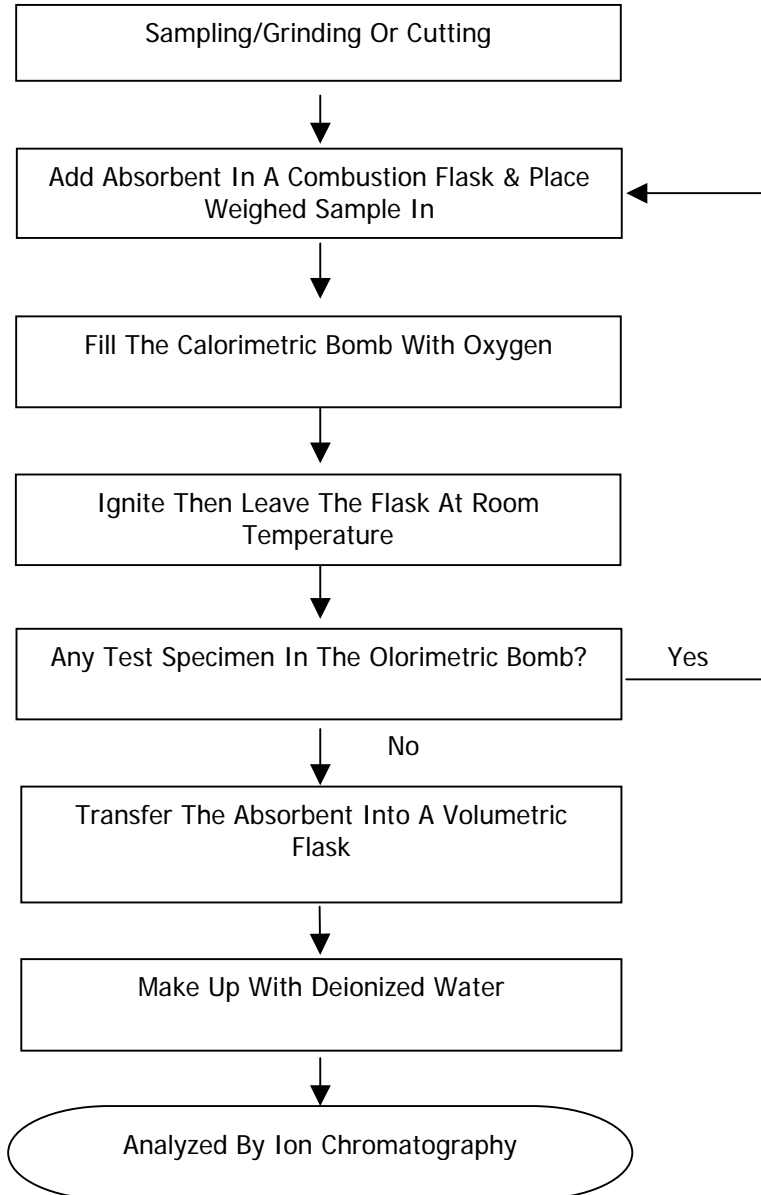
<u>Testing Item</u>	<u>Testing Method</u>	<u>Reporting Limit</u>
Halogen (F,Cl, Br,I) Content	With Reference To EN 14582:2007 By Combustion In A Calorimetric Bomb And Determined By Ion Chromatography	50 ppm

Remarks : Reporting Limit = Quantitation Limit Of Analyte In Sample

Tests Conducted (As Requested By The Applicant)

(III) Measurement Flowchart:

Test For Halogen Content Reference Method: EN 14582:2007



Chemist: Eve Deng

Tests Conducted (As Requested By The Applicant)

Photo



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Number : WUXH00016527

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, 2013

Sample Description As Declared:

One (1) Piece Of Submitted Sample Said To Be : **Silvery Gray Ink.**  
Item Name : UV Ink.  
Vendor : Bon Mark.  
Component Or Part No. : NA.  
Test Item : Cd,Pb,Hg,CrVI,PBBs,PBDEs,F,Cl,Br,I,Phthalate,HBCDD.

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

Conclusion:

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 Directive 2011/65/EU.	Pass

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

Jessica Lu  
General Manager





Number : WUXH00016527

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)	75
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI) (Cr <sup>6+</sup> ) 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
Sum Of PBBs	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
Sum Of PBDEs	ND

Remark:

mg/kg = Milligram Per Kilogram = ppm

ND = Not Detected



Number : WUXH00016527

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 <sup>6+</sup> )	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 RoHS Directive 2011/65/EU 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 Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Lead (Pb)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Mercury (Hg)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Chromium (VI) (Cr <sup>6+</sup> ) 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 62321 Edition 1.0: 2008, By Solvent Extraction And Determined By GC/MS And Further HPLC Confirmation When Necessary.	5 mg/kg

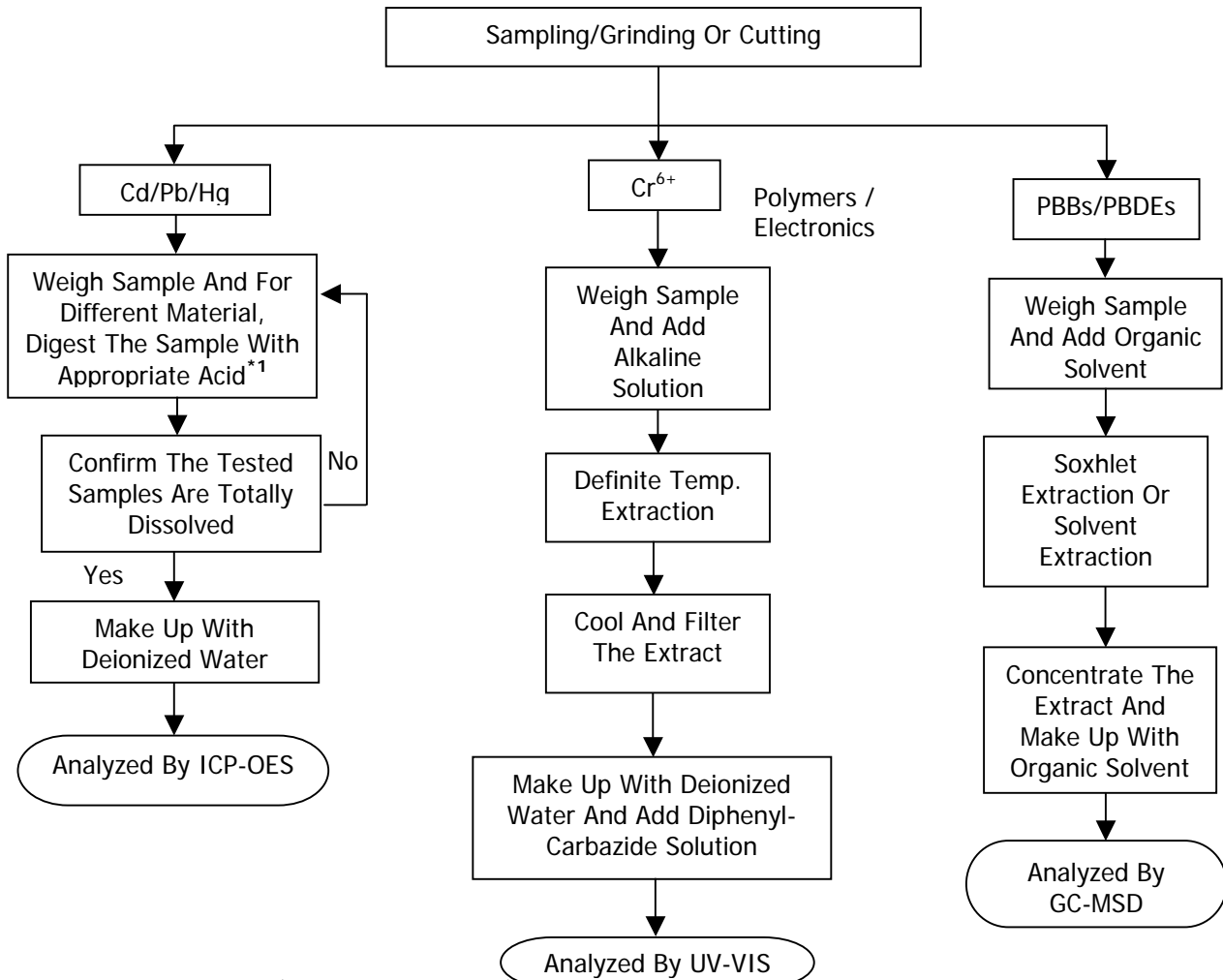
Date Sample Received: Jul 30, 2013

Testing Period: Jul 30 2013 To Aug 02, 2013

Tests Conducted (As Requested By The Applicant)

(D) Measurement Flowchart:

Reference Standard: IEC 62321 Edition 1.0: 2008



Chemist: Inorganic(Jenny Xu/Eve Deng)  
Organic (April Zang/Zoe Zhang)

Remarks:

\*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub>
Metals	HNO <sub>3</sub> , HCl, HF
Electronics	HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>



Number : WUXH00016527

Tests Conducted (As Requested By The Applicant)

2 Halogen Test

(I) Test Result Summary :

Halogen Content:

<u>Testing Item</u>	<u>Result (ppm)</u>
Fluorine (F) Content	ND
Chlorine (Cl)Content	109
Bromine (Br) Content	ND
Iodine (I) Content	ND

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

Date Sample Received: Jul 30, 2013

Testing Period: Jul 30 2013 To Aug 02, 2013

(II) Test Method :

<u>Testing Item</u>	<u>Testing Method</u>	<u>Reporting Limit</u>
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

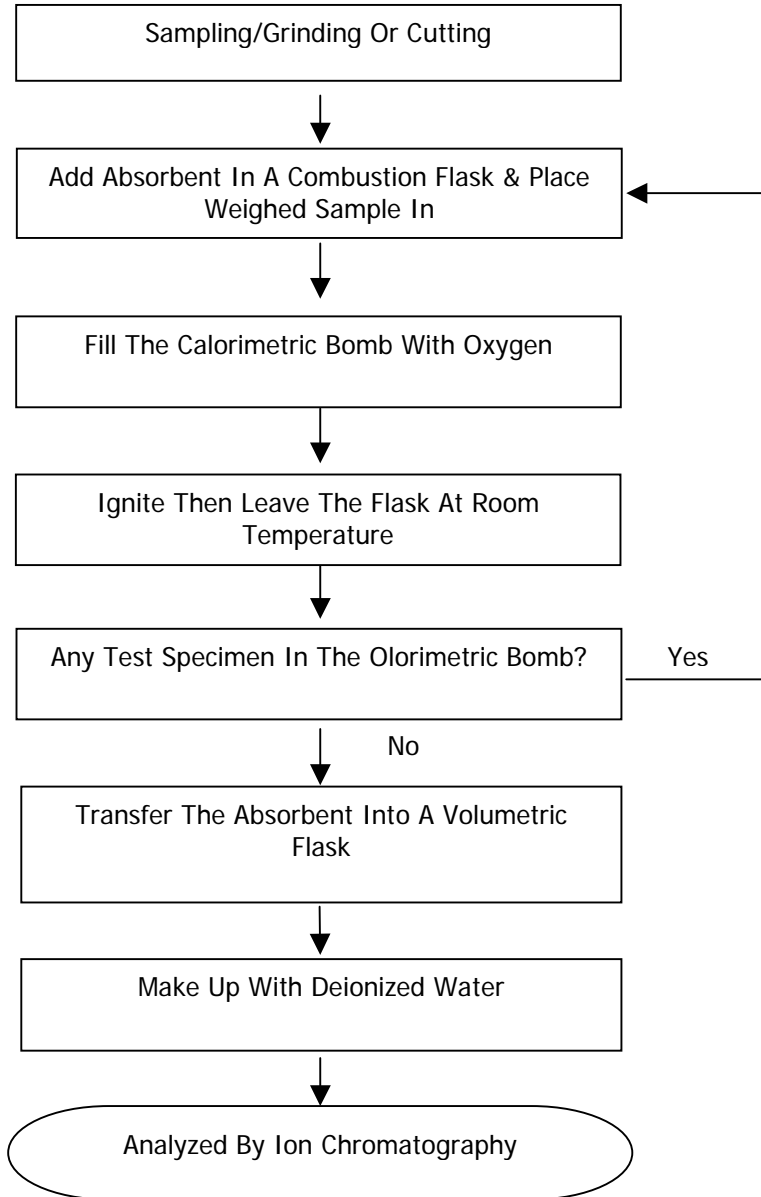
Remarks : Reporting Limit = Quantitation Limit Of Analyte In Sample



Tests Conducted (As Requested By The Applicant)

(III) Measurement Flowchart:

Test For Halogen Content Reference Method: EN 14582:2007



Chemist: Eve Deng



Number : WUXH00016527

Tests Conducted (As Requested By The Applicant)

3 Phthalate Content Test

With Reference To EN14372, By Gas Chromatographic-Mass Spectrometric (GC-MSD) Analysis.

<u>Tested Compound</u>	<u>Result (%W/W)</u>
Dibutyl Phthalate (DBP)	ND
Diethyl Hexyl Phthalate(DEHP)	ND
Benzyl Butyl Phthalate (BBP)	ND
Di-isobutyl phthalate(DIBP)	ND
Di-Iso-Nonyl Phthalate (DINP)	ND
Di-N-Octyl Phthalate (DNOP)	ND
Di-Iso-Decyl Phthalate (DIDP)	ND

Detection Limit = 0.01%(W/W)

ND = Not Detected

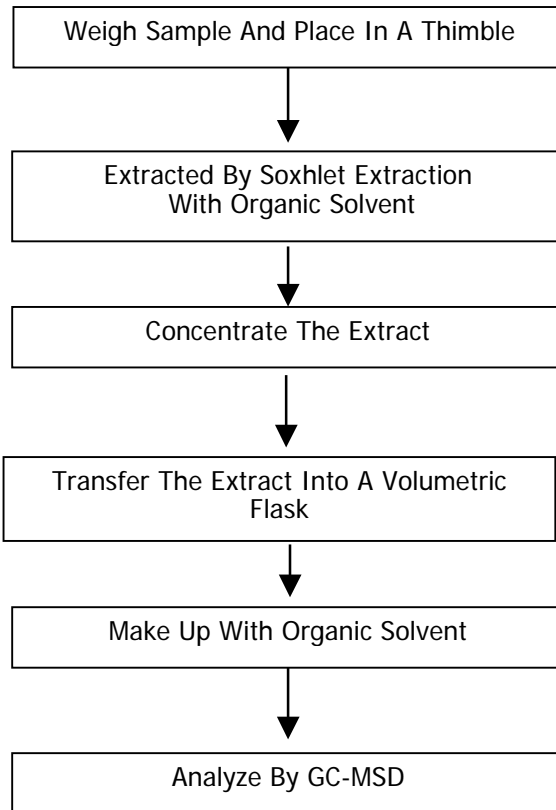
Date Sample Received : Jul 30, 2013

Testing Period : Jul 30, 2013 To Aug 02, 2013

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Tests Conducted (As Requested By The Applicant)  
Measurement Flowchart:

Test For Phthalates Contents



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

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Number : WUXH00016527

Tests Conducted (As Requested By The Applicant)

4 HBCDD (Hexabromocyclododecane)

(A) Test Result Summary:

<u>Testing Item</u>	<u>Result(ppm)</u>
HBCDD (Hexabromocyclododecane)	ND

Remarks:

ppm = Parts Per Million = mg/kg

ND = Not Detected

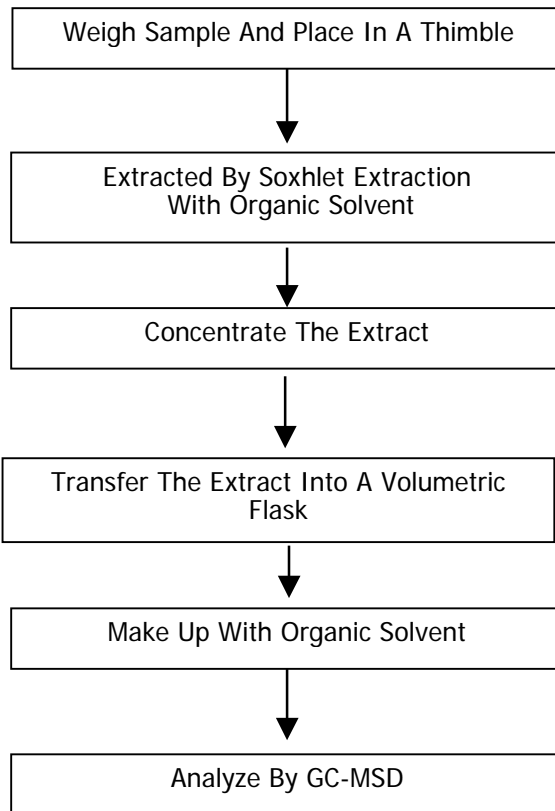
(B) Test Method :

<u>Testing Item</u>	<u>Testing Method</u>	<u>Reporting Limit</u>
HBCDD (Hexabromocyclododecane)	With Reference To US EPA 3540C, By Solvent Extraction And Determined By GC-MSD	10 ppm

Date Sample Received : Jul 30, 2013

Testing Period : Jul 30, 2013 To Aug 02, 2013

Tests Conducted (As Requested By The Applicant)  
Measurement Flowchart:  
Test For HBCDD (Hexabromocyclododecane) Content



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

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Tests Conducted (As Requested By The Applicant)

Photo



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*This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.*

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

L 174/88 EN Official Journal of the European Union 1.7.2011

**DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**  
of 8 June 2011  
on the restriction of the use of certain hazardous substances in electrical and electronic equipment  
(recast)  
(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 114 thereof,

Having regard to the proposal from the European Commission,

Having regard to the opinion of the European Economic and Social Committee (1),

Having regard to the opinion of the Committee of Regions (2),

Acting in accordance with the ordinary legislative procedure (3),

Whereas:

(1) A number of substantial changes are to be made to Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (4). In the interest of clarity, that Directive should be recast.

(2) The disparities between the laws or administrative measures adopted by the Member States regarding the restriction of the use of hazardous substances in electrical and electronic equipment (EEE) could create barriers to trade and distort competition in the Union and may thereby have a direct impact on the establishment and functioning of the internal market. It therefore appears necessary to lay down rules in this field and to contribute to the protection of human health and the environmentally sound recovery and disposal of waste EEE.

(3) Directive 2002/95/EC provides that the Commission shall review the provisions of that Directive, in particular, in order to include in its scope equipment which falls within certain categories and to study the need to adapt the list of restricted substances on the basis of scientific progress, taking into account the precautionary principle, as endorsed by Council Resolution of 4 December 2000.

(4) Council Directive 2006/12/EC of 16 February 2006 on persistent organic pollutants (5) recalls that the objective of protecting the environment and human health from persistent organic pollutants cannot be sufficiently achieved by the Member States, owing to the transboundary effects of those pollutants, and can therefore be better achieved at Union level. Pursuant to that Regulation, releases of persistent organic pollutants, such as dioxins and furans, which are unintentional by-products of industrial processes, should be identified and reduced as soon as possible with the ultimate aim of elimination, where feasible.

(5) The available evidence indicates that measures on the collection, treatment, recycling and disposal of waste EEE, as set out in Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE) (6) are necessary to reduce the waste management problems associated with the heavy metals and flame retardants concerned. In spite of those measures, however, significant parts of waste EEE will continue to be found in the current disposal routes inside or outside the Union. Even if waste EEE were collected separately and submitted to recycling processes, its content of mercury, cadmium, lead, chromium VI, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE) would be likely to pose risks to health or the environment, especially when treated in less than optimal conditions.

(6) Council Directive 2002/2004 of the European Parliament and of the Council of 25 April 2004 on persistent organic pollutants (7) recalls that the objective of protecting the environment and human health from persistent organic pollutants cannot be sufficiently achieved by the Member States, owing to the transboundary effects of those pollutants, and can therefore be better achieved at Union level. Pursuant to that Regulation, releases of persistent organic pollutants, such as dioxins and furans, which are unintentional by-products of industrial processes, should be identified and reduced as soon as possible with the ultimate aim of elimination, where feasible.

(7) Council Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (8) provides that the Commission shall review the provisions of that Directive, in particular, in order to include in its scope equipment which falls within certain categories and to study the need to adapt the list of restricted substances on the basis of scientific progress, taking into account the precautionary principle, as endorsed by Council Resolution of 4 December 2000.

(8) Council Directive 2006/12/EC of 16 February 2006 on persistent organic pollutants (9) recalls that the objective of protecting the environment and human health from persistent organic pollutants cannot be sufficiently achieved by the Member States, owing to the transboundary effects of those pollutants, and can therefore be better achieved at Union level. Pursuant to that Regulation, releases of persistent organic pollutants, such as dioxins and furans, which are unintentional by-products of industrial processes, should be identified and reduced as soon as possible with the ultimate aim of elimination, where feasible.

(9) Council Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (10) provides that the Commission shall review the provisions of that Directive, in particular, in order to include in its scope equipment which falls within certain categories and to study the need to adapt the list of restricted substances on the basis of scientific progress, taking into account the precautionary principle, as endorsed by Council Resolution of 4 December 2000.

(10) Council Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (11) provides that the Commission shall review the provisions of that Directive, in particular, in order to include in its scope equipment which falls within certain categories and to study the need to adapt the list of restricted substances on the basis of scientific progress, taking into account the precautionary principle, as endorsed by Council Resolution of 4 December 2000.

(11) Council Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (12) provides that the Commission shall review the provisions of that Directive, in particular, in order to include in its scope equipment which falls within certain categories and to study the need to adapt the list of restricted substances on the basis of scientific progress, taking into account the precautionary principle, as endorsed by Council Resolution of 4 December 2000.

L 174/100 EN Official Journal of the European Union 1.7.2011

**ANNEX II**

**Restricted substances referred to in Article 4(1) and maximum concentration values indicated by weight in homogeneous materials**

Lead (0.1 %)   
 Mercury (0.1 %)   
 Cadmium (0.01 %)   
 Hexavalent chromium (0.1 %)   
 Polybrominated biphenyls (PBB) (0.1 %)   
 Polybrominated diphenyl ethers (PBDE) (0.1 %)

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3. Paragraph 1 shall apply to medical devices and monitoring and control instruments which are placed on the market from 22 July 2014, to in vitro diagnostic medical devices which are placed on the market from 22 July 2016 and to industrial monitoring and control instruments which are placed on the market from 22 July 2017.

4. Paragraph 1 shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of the following:

(a) EEE placed on the market before 1 July 2006;

(b) medical devices placed on the market before 22 July 2014;

(c) in vitro diagnostic medical devices placed on the market before 22 July 2016;

(d) monitoring and control instruments placed on the market before 22 July 2014;

(e) industrial monitoring and control instruments placed on the market before 22 July 2017;

(f) EEE which benefited from an exemption and which was placed on the market before that exemption expired as far as that specific exemption is concerned.

5. Paragraph 1 shall not apply to reused spare parts, recovered from EEE placed on the market before 1 July 2006 and used in equipment placed on the market before 1 July 2016, provided that reuse takes place in suitable closed-loop business-to-business return systems, and that the reuse of parts is notified to the consumer.

6. Paragraph 1 shall not apply to the applications listed in Annexes III and IV.

**Article 5**  
**Adaptation of the Annexes to scientific and technical progress**

1. For the purposes of adapting Annexes III and IV to scientific and technical progress and in order to achieve the objectives set out in Article 1, the Commission shall adopt by means of individual delegated acts in accordance with Article 20 and subject to the conditions laid down in Articles 21 and 22, the following measures:

(a) inclusion of materials and components of EEE for specific applications in the lists in Annexes III and IV, provided that such inclusion does not weaken the environmental and health protection afforded by Regulation (EC) No 1907/2006 and where any of the following conditions is fulfilled:

- their elimination or substitution via design changes or materials and components which do not require any of the materials or substances listed in Annex II is scientifically or technically impracticable,
- the reliability of substitutes is not ensured,
- the total negative environmental, health and consumer safety impacts caused by substitution are likely to outweigh the total environmental, health and consumer safety benefits thereof.

(b) deletion of materials and components of EEE from the lists in Annexes III and IV where the conditions set out in point (a) are no longer fulfilled.

2. Measures adopted in accordance with point (a) of paragraph 1 shall, for categories 1 to 7, 10 and 11 of Annex I, have a validity period of up to 5 years and, for categories 8 and 9 of Annex I, a validity period of up to 7 years. The validity periods are to be decided on a case-by-case basis and may be renewed.

For the exemptions listed in Annex III as at 21 July 2011, the maximum validity period, which may be renewed, shall, for categories 1 to 7 and 10 of Annex I, be 5 years from 21 July 2011 and for categories 8 and 9 of Annex I, 7 years from the relevant date laid down in Article 4(3), unless a shorter period is specified.

For the exemptions listed in Annex IV as at 21 July 2011, the maximum validity period, which may be renewed, shall be 7 years from the relevant date laid down in Article 4(3), unless a shorter period is specified.

3. An application for granting, renewing or revoking an exemption shall be made to the Commission in accordance with Annex V.

4. The Commission shall:

(a) acknowledge receipt of an application in writing within 15 days of its receipt. The acknowledgement shall state the date of receipt of the application;

(b) inform the Member States of the application without delay and make the application and any supplementary information supplied by the applicant available to them;

(c) make a summary of the application available to the public;

(d) evaluate the application and its justification;

5. An application for renewal of an exemption shall be made no later than 18 months before the exemption expires.

The Commission shall decide on an application for renewal of an exemption no later than 6 months before the expiry date of the existing exemption unless specific circumstances justify other deadlines. The existing exemption shall remain valid until a decision on the renewal application is taken by the Commission.

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Exemption	Scope and date of applicability	
6(4)	Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35 % lead by weight	
6(5)	Lead as an alloying element in aluminium containing up to 0.4 % lead by weight	
6(6)	Copper alloy containing up to 4 % lead by weight	
7(4)	Lead in high melting temperature type alloys (a lead based alloy containing 85 % by weight or more lead)	
7(5)	Lead in cables for aircars, storage and storage area systems, network infrastructure equipment for switching, signalling, transmission and network management for telecommunications	
7(5)(1)	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound	
7(5)(2)	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	
7(5)(3)	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(4)	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(5)	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(4)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVAC/R) applications	
11(4)	Lead used in C-type compliant pin connector systems	May be used in spare parts for EEE placed on the market before 24 September 2010
11(5)	Lead used in other than C-type 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 Coring	May be used in spare parts for EEE placed on the market before 24 September 2010
13(4)	Lead in white glazes used for optical applications	
13(5)	Cadmium and lead in filter glasses and glazes used for reflectance standards	
14	Lead in cables 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	Expires on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011