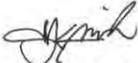




## ICP Test Report Certification Packet

Company name: Littelfuse, Inc.  
Product Series: DO214 AB - SMCJ, SMDJ, 1.5SMC, 3.0SMC, 5.0SMDJ Series  
Product #: TVS Diode  
Issue Date: January 9, 2013

It is hereby certified by Littelfuse, Inc. that there is neither RoHS (EU Directive 2002/95/EC, 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:   
KRISTEEN BACILA

\_\_\_\_\_  
<Global EHS Engineer>

(1) Parts, sub-materials and unit parts

This document covers the SMCJ, SMDJ, 1.5SMC, 5.0SMDJ RoHS-Compliant series products manufactured by Littelfuse, Inc.

< Raw Materials Used

Please see Table 1

(2) The ICP data on all measurable substances

Please see appropriate pages as identified in Table 1

**Remarks : under RoHS Exemptions 5 (7c-1 in the New RoHS exemption) and 7a apply to these products.**



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

<b>Total Parts</b>	<b>Raw Material Part Number</b>	<b>Raw Material Description</b>	<b>Page(s)</b>
1	NA	Silicon Wafer with Nickel Plating	3-7
2	NA	Wafer Passivation (glass)	8-14
3	NA	Lead Frame	15-18
4	NA	Solder Paster	19-29
5	EME-E110G	Epoxy Molding Compound	30-40
6	NA	Tin Plating (SMD)	41-44
7	NA	Tin Plating (Axial)	45-48



Number : WUXH00009738

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 : Jul 26, 2012

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,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 : WUXH00009738

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)	31
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
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



Number : WUXH00009738

Tests Conducted (As Requested By The Applicant)

(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)
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:

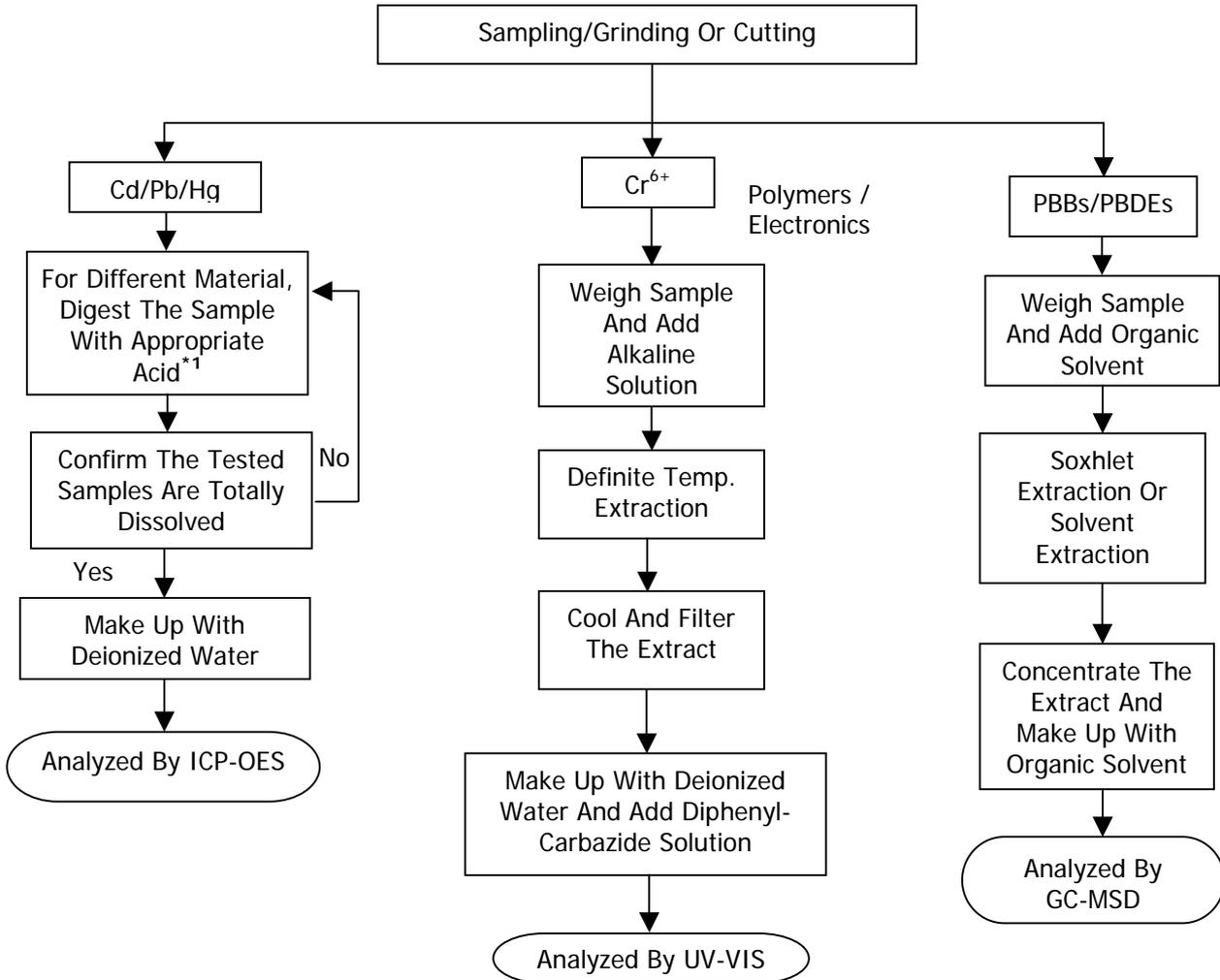
<b>Testing Item</b>	<b>Testing Method</b>	<b>Reporting Limit</b>
Cadmium (Cd)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Lead (Pb)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Mercury (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 <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-MSD And Further HPLC Confirmation When Necessary.	5 mg/kg

Date Sample Received: Jul 23, 2012

Testing Period: Jul 23, 2012 To Jul 26,2012

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 <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 : WUXH00009741

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 : Jul 26, 2012

Sample Description As Declared:

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

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

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

Jessica Lu  
General Manager



Number : WUXH00009741

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)	142100
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
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



Number : WUXH00009741

Tests Conducted (As Requested By The Applicant)

(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)
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:

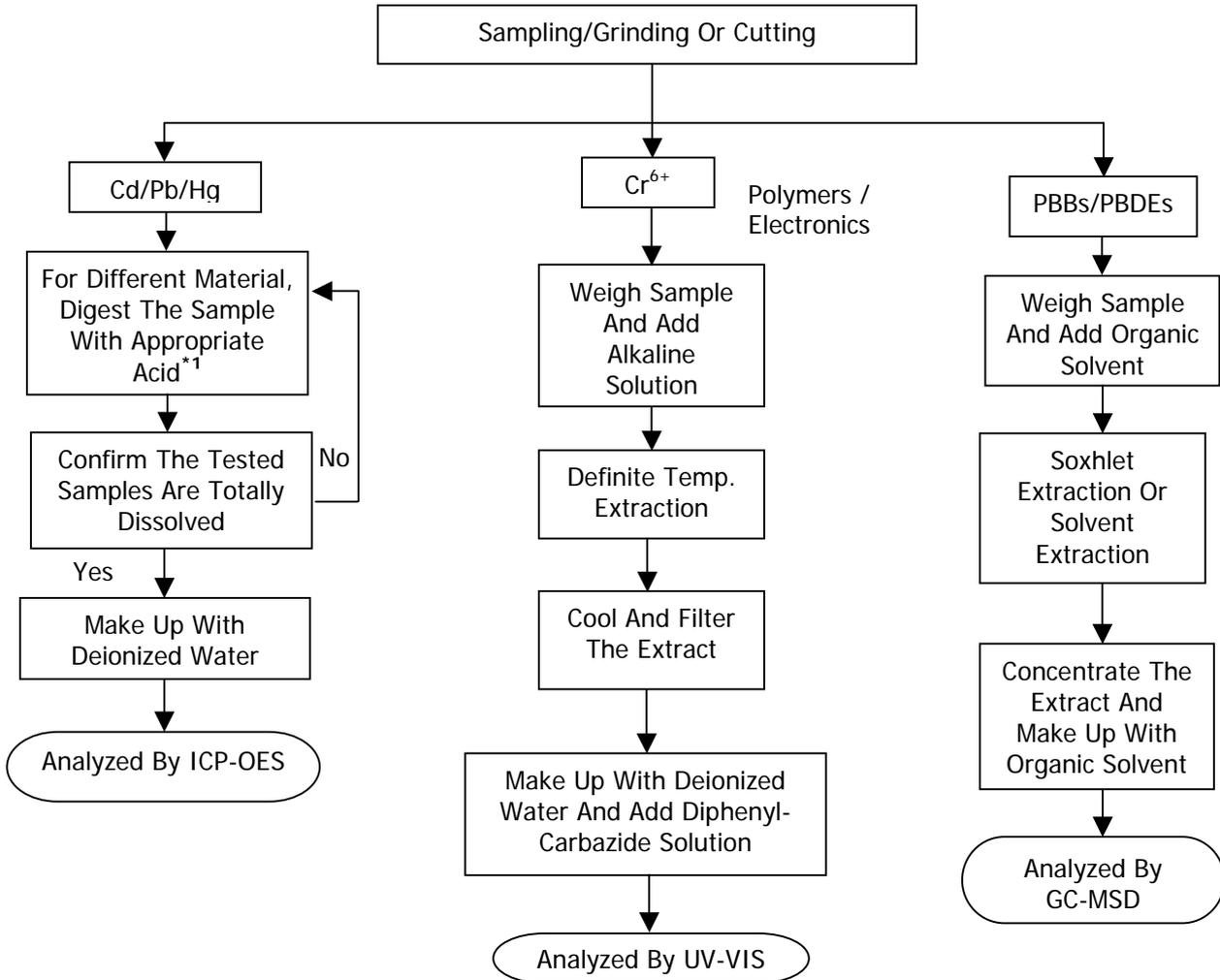
<b>Testing Item</b>	<b>Testing Method</b>	<b>Reporting Limit</b>
Cadmium (Cd)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Lead (Pb)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Mercury (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 <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-MSD And Further HPLC Confirmation When Necessary.	5 mg/kg

Date Sample Received: Jul 23, 2012

Testing Period: Jul 23, 2012 To Jul 26,2012

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 <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 : WUXH00009741

Tests Conducted (As Requested By The Applicant)

2 Halogen Test

(I) Test Result Summary :

Halogen Content:

Testing Item	Result (ppm)
	Submitted Samples
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 Receive: Jul 23, 2012

Test Period: Jul 23, 2012 To Jul 26, 2012

(II) Test Method :

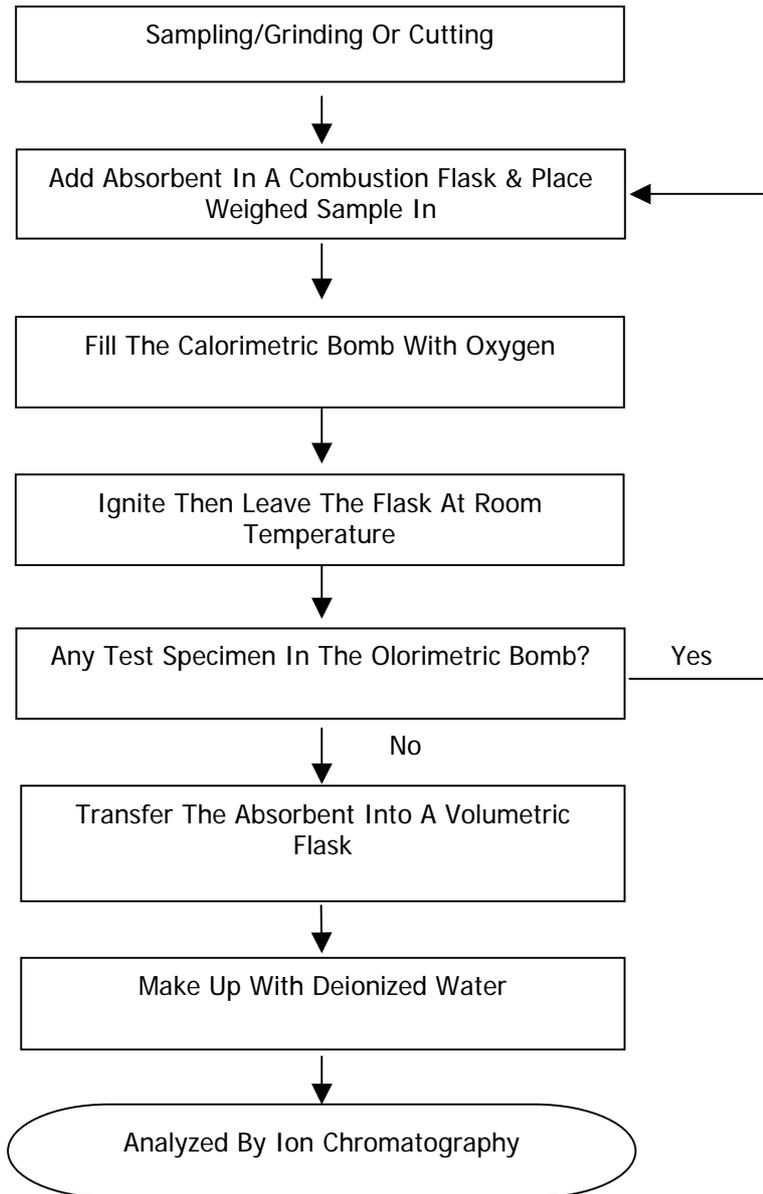
Testing Item	Testing Method	Reporting Limit
Halogen (F, Cl, Br, I) Content	With Reference To EN 14582:2007 By Combustion In A Calorimetric Bomb And Determined By Ion Chromatography	50 ppm

Remarks : Reporting Limit = Quantitation Limit Of Analyte In Sample

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

Tests Conducted (As Requested By The Applicant)

Photo



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Number : WUXH00009747

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 : Jul 26, 2012

Sample Description As Declared:

One (1) Piece Of Submitted Sample Said To Be : Copper Metal.  
Item Name : Lead Frame/Lead Frame Matrix/TO-220 Lead Frame/Heatsink/Copper Slug.  
Vendor :  
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:

<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 Directives 2002/95/EC And Amendment 2005/618/EC	Pass

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

Jessica Lu  
General Manager

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> ) Result (By Boiling Water Extraction On Metal) (mg/kg With 50cm <sup>2</sup> )	N

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

(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)

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

(C) Test Method:

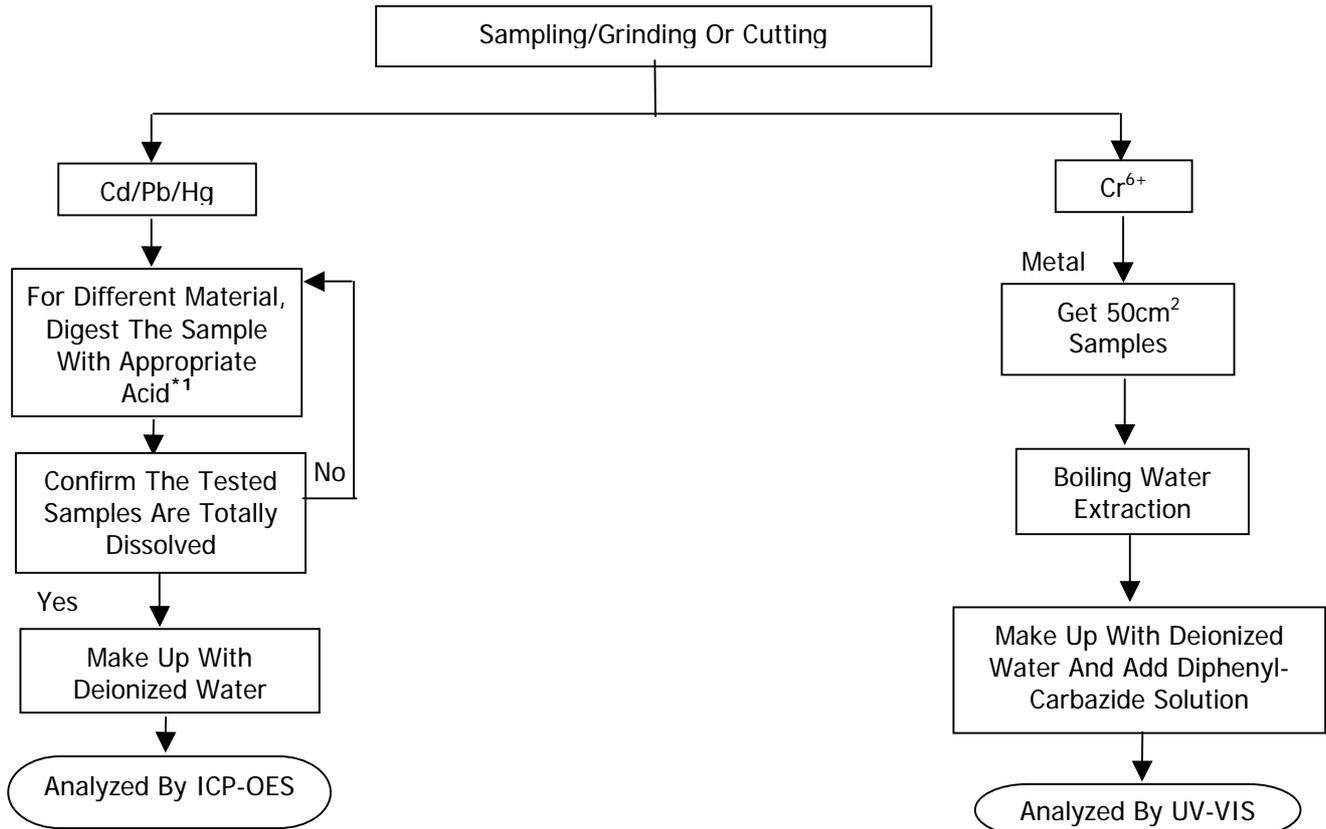
Testing Item	Testing Method	Reporting Limit
Cadmium (Cd)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Lead (Pb)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Mercury (Hg)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Chromium (VI) (Cr <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 23, 2012

Testing Period: Jul 23, 2012 To Jul 26,2012

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 <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 : WUXH00009758

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 : Jul 27, 2012

Sample Description As Declared:

One (1) Piece Of Submitted Sample Said To Be : Gray Paste.

Item Name : Solder Paste.

Vendor :

Component Or Part No. : AG3-D3-NC237-6(Pb:Sn:Ag=92.5:5:2.5).

Test Item : Cd,Pb,Hg,CrVI,PBBs,PBDEs,F,Cl,Br,I,Phthalate,HBCD.

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Tests Conducted:

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

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

Jessica Lu  
General Manager

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)	920400
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
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



Number : WUXH00009758

Tests Conducted (As Requested By The Applicant)

(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)
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:

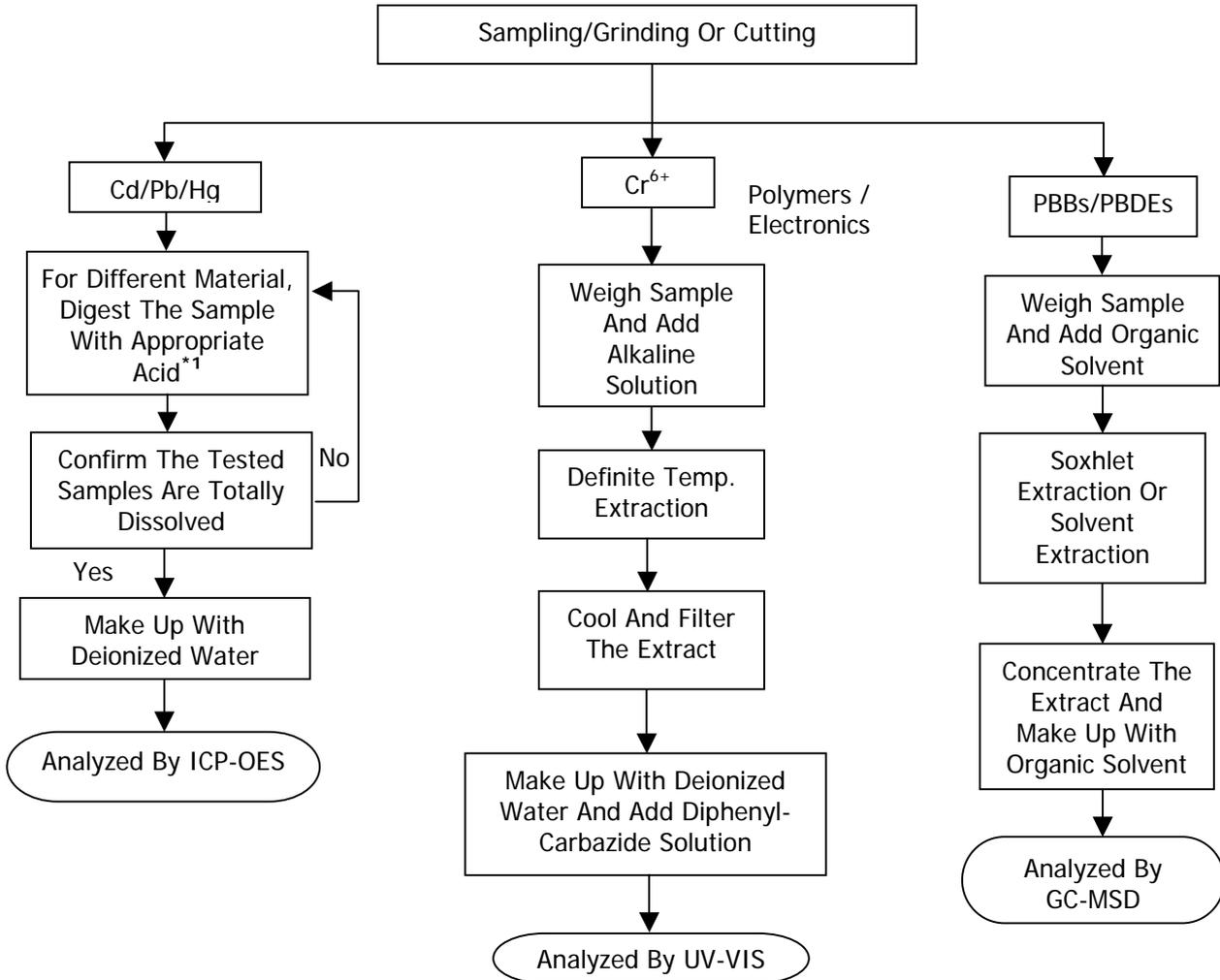
<b>Testing Item</b>	<b>Testing Method</b>	<b>Reporting Limit</b>
Cadmium (Cd)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Lead (Pb)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Mercury (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 <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-MSD And Further HPLC Confirmation When Necessary.	5 mg/kg

Date Sample Received: Jul 23, 2012

Testing Period: Jul 23, 2012 To Jul 26,2012

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 <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 : WUXH00009758

Tests Conducted (As Requested By The Applicant)

2 Halogen Test

(I) Test Result Summary :

Halogen Content:

<u>Testing Item</u>	<u>Result (ppm)</u>
	<u>Submitted Samples</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 Receive: Jul 23, 2012

Test Period: Jul 23, 2012 To Jul 26,2012

(II) Test Method :

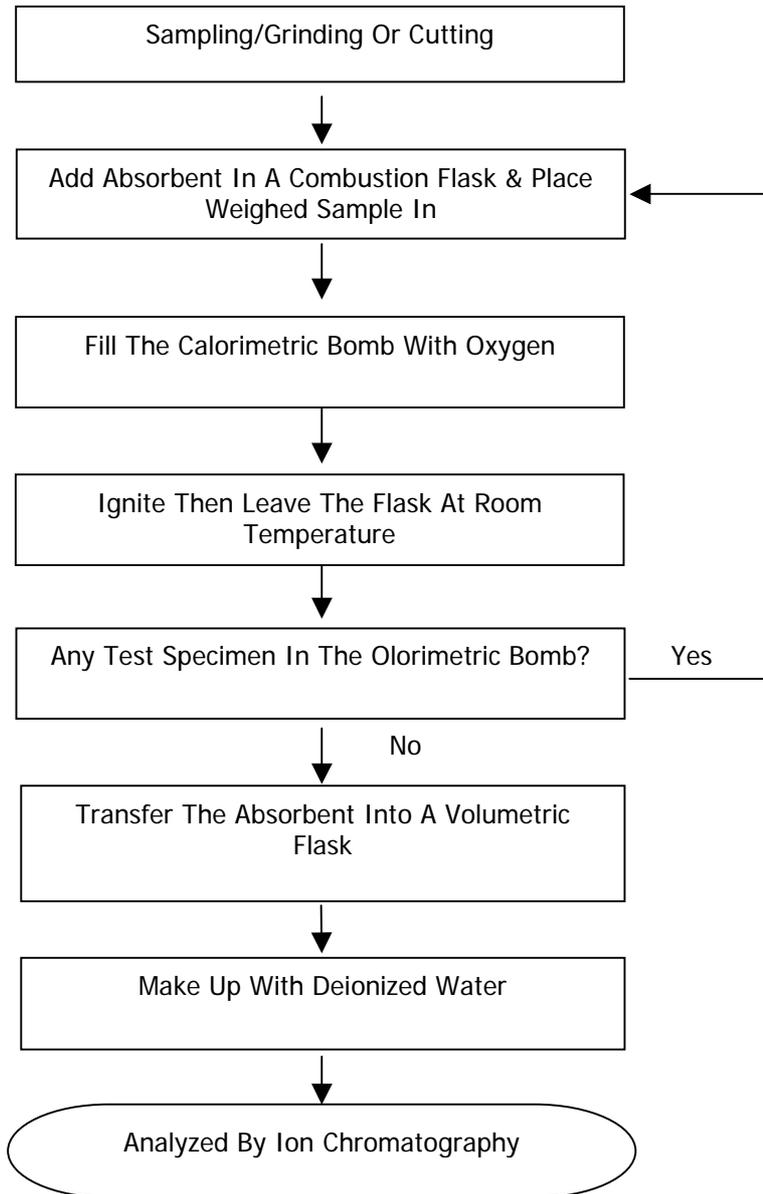
<u>Testing Item</u>	<u>Testing Method</u>	<u>Reporting Limit</u>
Halogen (F,Cl, Br,I) Content	With Reference To EN 14582:2007 By Combustion In A Calorimetric Bomb And Determined By Ion Chromatography	50 ppm

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: Fred Wang/ Ally Wan Ally Wan

## 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>	<u>Limit(%.,W/W)</u> (Max.)
Dibutyl Phthalate (DBP)	ND	---
Diethyl Hexyl Phthalate(DEHP)	ND	---
Benzyl Butyl Phthalate (BBP)	ND	---
Sum Of Three Phthalates	ND	0.1
Di-Iso-Nonyl Phthalate (DINP)	ND	---
Di-N-Octyl Phthalate (DNOP)	ND	---
Di-Iso-Decyl Phthalate (DIDP)	ND	---
Sum Of Three Phthalates	ND	0.1

Remark : The Above Limit Was Quoted According To Annex XVII Items 51 & 52 Of The Reach Regulation (EC) No. 1907/2006 (Formerly Known As Directive2005/84/EC) For Phthalate Content In Toys And Children Care Articles.

Detection Limit = 0.01%(W/W)

ND = Not Detected

Date Sample Received : Jul 23, 2012

Testing Period : Jul 23, 2012 To Jul 26,2012

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**Comment :**

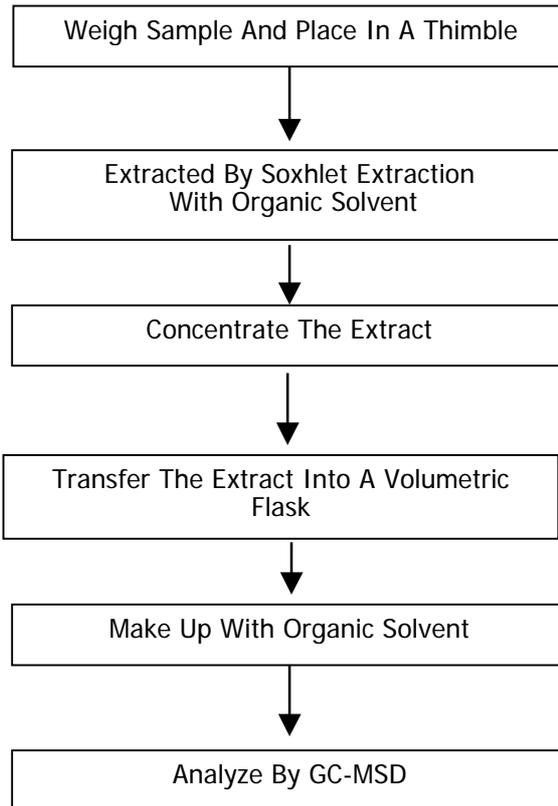
The Phthalate Content Test Result Of Tested Sample Did Not Exceed The Limit Of 0.1% By Weight As Stated In Annex XVII Items 51 & 52 Of The Reach Regulation (EC) No. 1907/2006 (Formerly Known As Directive 2005/84/EC) Relating To Restrictions On Phthalates In Toys And Children Care Articles.

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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 : WUXH00009758

Tests Conducted (As Requested By The Applicant)

4 HBCD (Hexabromocyclododecane)

(A) Test Result Summary:

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

Remarks:

ppm = Parts Per Million = mg/kg

ND = Not Detected

(B) Test Method :

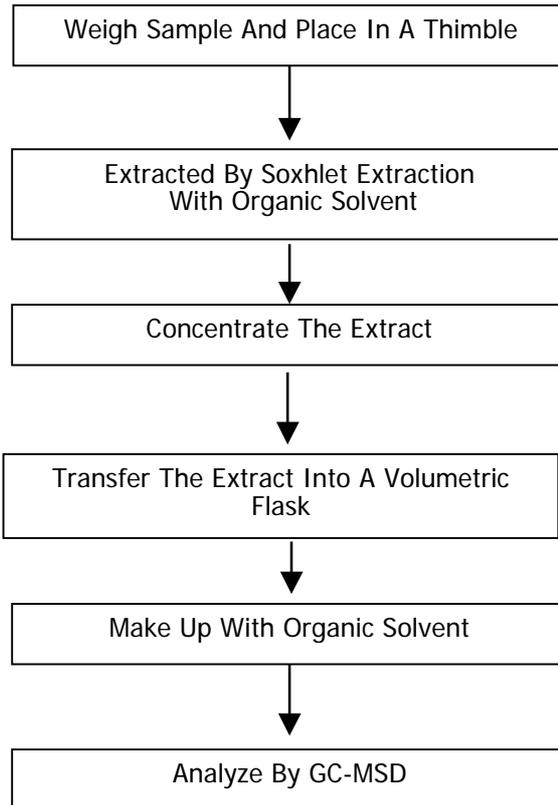
<u>Testing Item</u>	<u>Testing Method</u>	<u>Reporting Limit</u>
HBCD (Hexabromocyclododecane)	With Reference To US EPA 3540C, By Solvent Extraction And Determined By GC-MSD	10 ppm

Date Sample Received : Jul 23, 2012

Testing Period : Jul 23, 2012 To Jul 26,2012

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Tests Conducted (As Requested By The Applicant)  
Measurement Flowchart:  
Test For HBCD (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 : WUXH00009771

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 : Jul 26, 2012

Sample Description As Declared:

One (1) Piece Of Submitted Sample Said To Be : Grey Epoxy Molding Compound.  
Item Name : Epoxy Molding Compound.  
Vendor :  
Component Or Part No. : EME-E110G.  
Test Item : Cd,Pb,Hg,CrVI,PBBs,PBDEs,F,Cl,Br,I,Phthalate,HBCD.

Tests Conducted:

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

Summary:

<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 Directives 2002/95/EC And Amendment 2005/618/EC	Pass

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

Jessica Lu  
General Manager

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
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



Number : WUXH00009771

Tests Conducted (As Requested By The Applicant)

(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)
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:

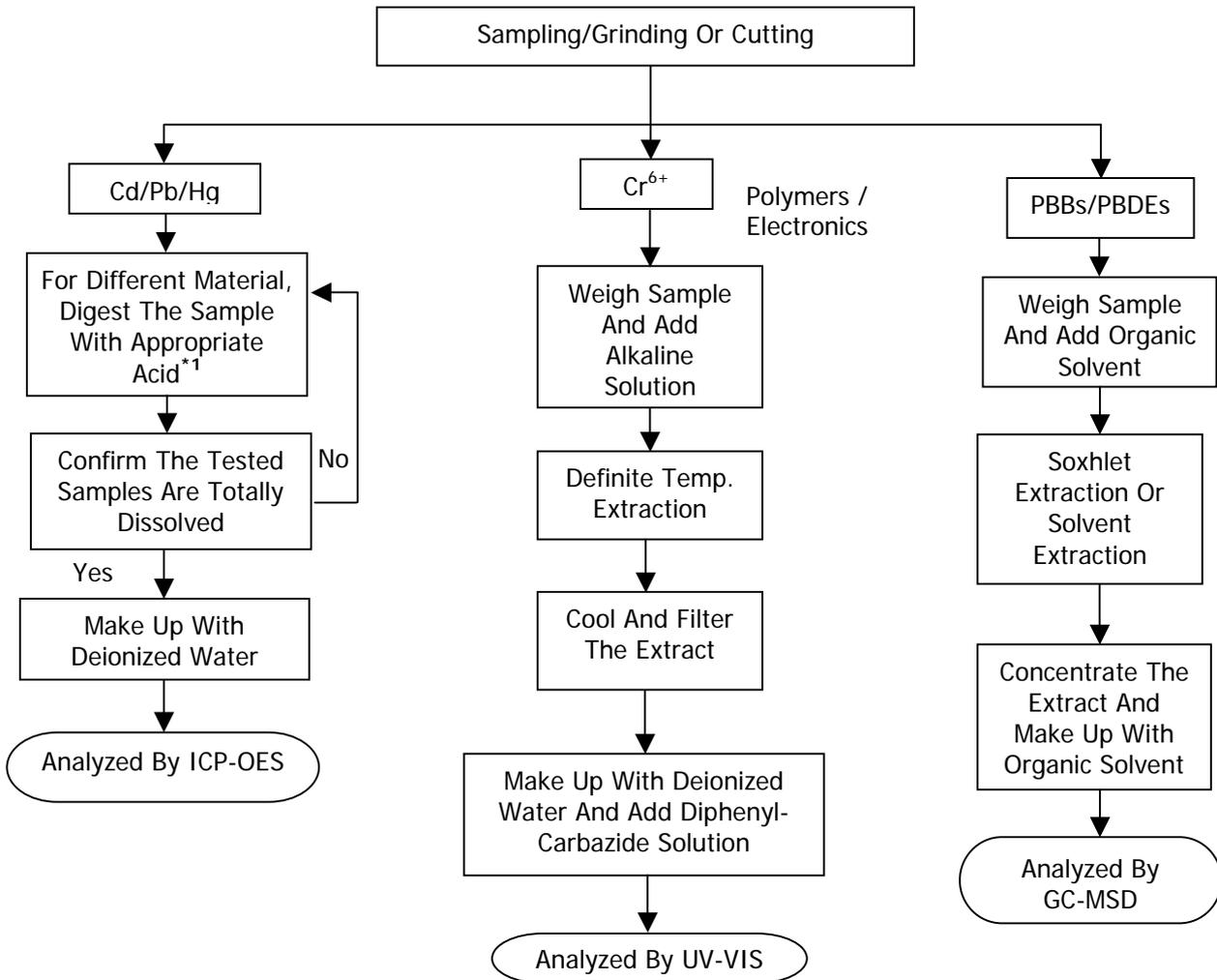
<b>Testing Item</b>	<b>Testing Method</b>	<b>Reporting Limit</b>
Cadmium (Cd)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Lead (Pb)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Mercury (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 <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-MSD And Further HPLC Confirmation When Necessary.	5 mg/kg

Date Sample Received: Jul 23, 2012

Testing Period: Jul 23, 2012 To Jul 26,2012

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 <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 : WUXH00009771

Tests Conducted (As Requested By The Applicant)

2 Halogen Test

(I) Test Result Summary :

Halogen Content:

Testing Item	Result (ppm)
	Submitted Samples
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 Receive: Jul 23, 2012

Test Period: Jul 23, 2012 To Jul 26, 2012

(II) Test Method :

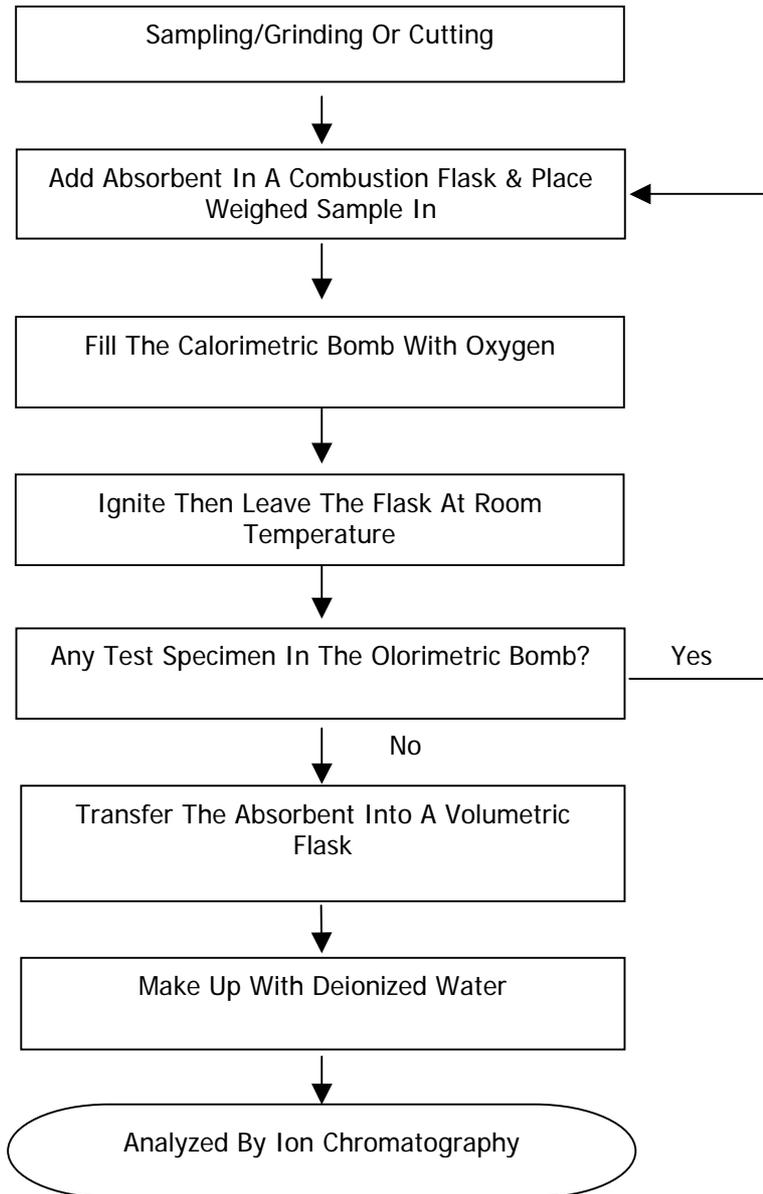
Testing Item	Testing Method	Reporting Limit
Halogen (F, Cl, Br, I) Content	With Reference To EN 14582:2007 By Combustion In A Calorimetric Bomb And Determined By Ion Chromatography	50 ppm

Remarks : Reporting Limit = Quantitation Limit Of Analyte In Sample

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

## 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>	<u>Limit(%.,W/W)</u> (Max.)
Dibutyl Phthalate (DBP)	ND	---
Diethyl Hexyl Phthalate(DEHP)	ND	---
Benzyl Butyl Phthalate (BBP)	ND	---
Sum Of Three Phthalates	ND	0.1
Di-Iso-Nonyl Phthalate (DINP)	ND	---
Di-N-Octyl Phthalate (DNOP)	ND	---
Di-Iso-Decyl Phthalate (DIDP)	ND	---
Sum Of Three Phthalates	ND	0.1

Remark : The Above Limit Was Quoted According To Annex XVII Items 51 & 52 Of The Reach Regulation (EC) No. 1907/2006 (Formerly Known As Directive2005/84/EC) For Phthalate Content In Toys And Children Care Articles.

Detection Limit = 0.01%(W/W)

ND = Not Detected

Date Sample Received : Jul 23, 2012

Testing Period : Jul 23, 2012 To Jul 26,2012

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**Comment :**

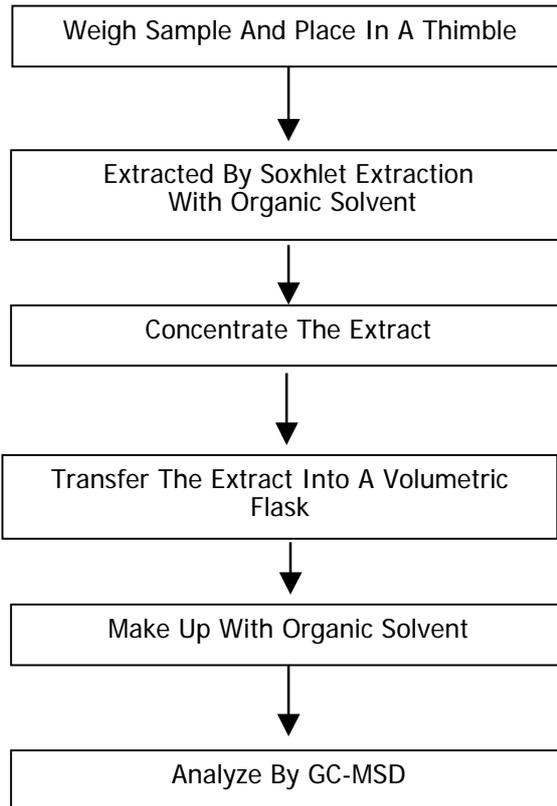
The Phthalate Content Test Result Of Tested Sample Did Not Exceed The Limit Of 0.1% By Weight As Stated In Annex XVII Items 51 & 52 Of The Reach Regulation (EC) No. 1907/2006 (Formerly Known As Directive 2005/84/EC) Relating To Restrictions On Phthalates In Toys And Children Care Articles.

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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 : WUXH00009771

Tests Conducted (As Requested By The Applicant)

4 HBCD (Hexabromocyclododecane)

(A) Test Result Summary:

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

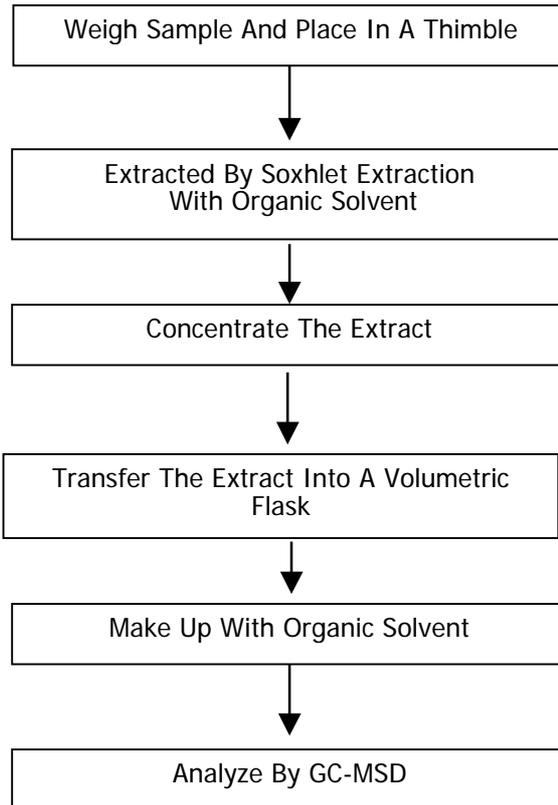
Date Sample Received : Jul 23, 2012

Testing Period : Jul 23, 2012 To Jul 26,2012

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Tests Conducted (As Requested By The Applicant)  
Measurement Flowchart:  
Test For HBCD (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 : WUXH00009782

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 : Jul 27, 2012

Sample Description As Declared:

One (1) Piece Of Submitted Sample Said To Be : Black Plastic With Silvery Metal Pin.

Item Name : Tin Plating(SMD).

Vendor :

Component Or Part No. : Pure Matte Tin.

Test Item : Cd, Pb, Hg, CrVI.

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Tests Conducted:

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

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

Jessica Lu  
General Manager

Tests Conducted (As Requested By The Applicant)

1 RoHS Directives Test

(A) Test Result Summary:

Testing Item	Result
Cadmium (Cd) Content / Plating	ND
Lead (Pb) Content / Plating	62
Mercury (Hg) Content / 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 = Milligram Per Kilogram = ppm

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

ND = Not Detected

N=Negative

The Result Is For Reference Only.

Tested Component: Metal Pin Plating.

(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)

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

(C) Test Method:

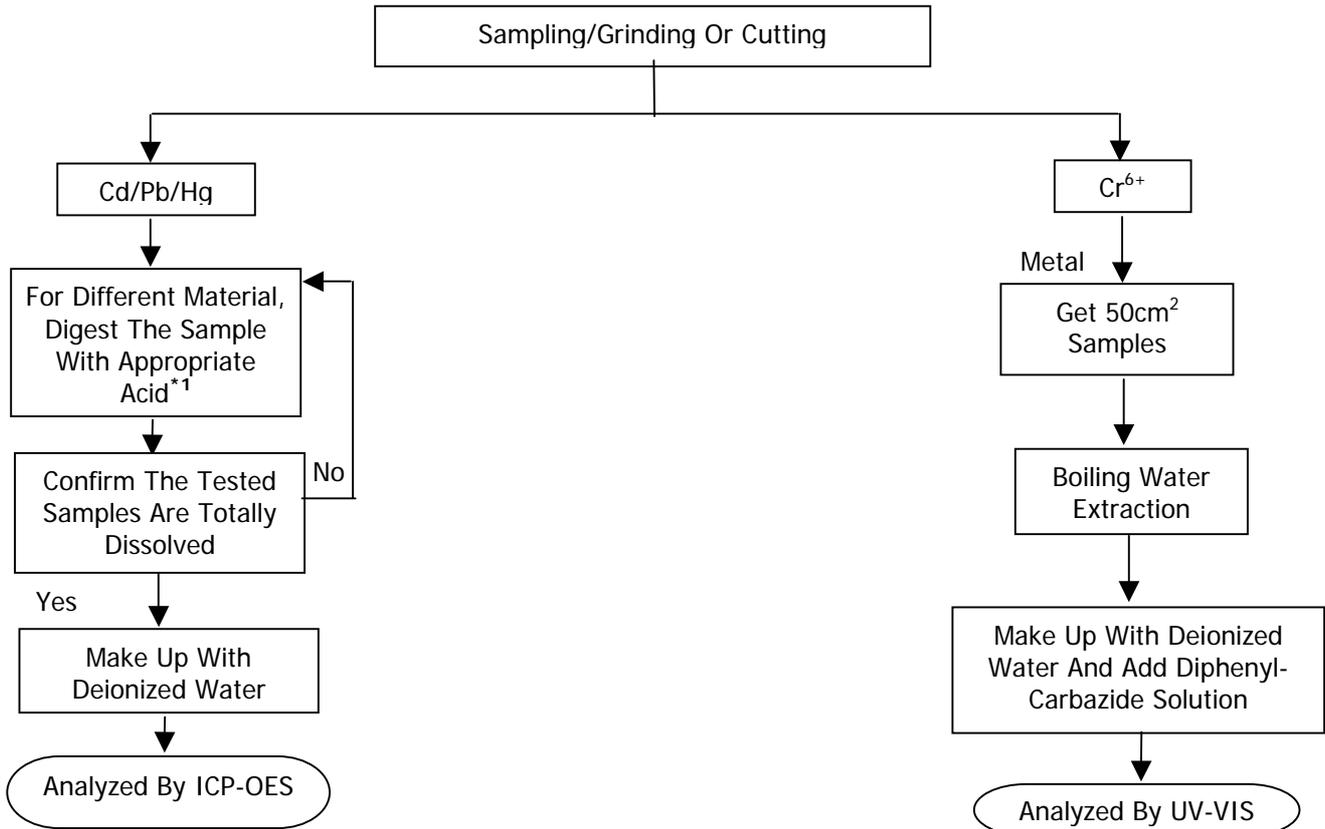
Testing Item	Testing Method	Reporting Limit
Cadmium (Cd)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Lead (Pb)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Mercury (Hg)Content	With Reference To IEC 62321 Edition 1.0: 2008, By Acid Digestion And Determined By ICP-OES	2 mg/kg
Chromium (VI) (Cr <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 23, 2012

Testing Period: Jul 23, 2012 To Jul 26,2012

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 <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 : WUXH00009743

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 : Jul 26, 2012

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 :

Component Or Part No. : Pure Matte Tin.

Test Item : Cd,Pb,Hg,CrVI.

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Tests Conducted:

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

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

Jessica Lu  
General Manager

Tests Conducted (As Requested By The Applicant)

1 RoHS Directives Test

(A) Test Result Summary:

Testing Item	Result
Cadmium (Cd) Content (mg/kg)/Plating	ND
Lead (Pb) Content (mg/kg)/Plating	60
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 = Milligram Per Kilogram = ppm

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

ND = Not Detected

N=Negative

The Result Is For Reference Only.

Tested Component: Metal Pin Plating.

(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)

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 <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)

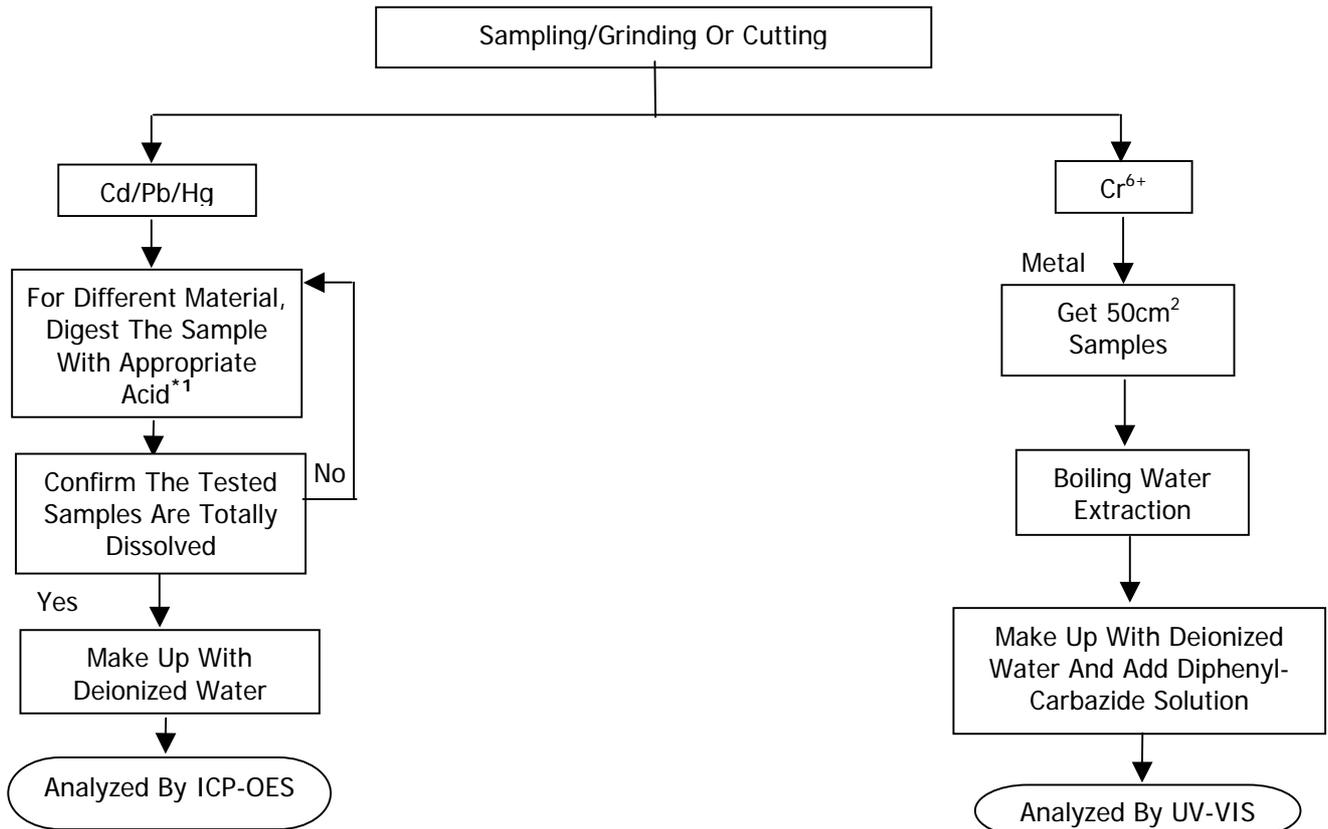
Date Sample Received: Jul 23, 2012

Testing Period: Jul 23, 2012 To Jul 26, 2012

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 <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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