

Certificate of non-use of The Controlled Substances

Company name Littelfuse, Inc.

Product Covered SIDACtor[®], DO-214AA & COMPAK[®] Package
 SIDAC, DO-214AA Package
 SiBOD[™], DO-214AA Package, SMTBJ series
 Thyristor, COMPAK[®] Package
 BATTRAX[®], COMPAK[®] Package
 PLED, DO-214AA Package

Issue Date August 12, 2020

It is hereby certified by Littelfuse, Inc., that there is neither RoHS (EU Directive 2002/95/EC)-restricted substance, nor such use, for materials to be used for unit parts, for packing/packaging materials, and for additives and the like in the manufacturing processes.

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

In addition, it is hereby reported to you that the parts and sub-materials, the materials to be used for unit parts, the packing/packaging materials, and the additives and the like in the manufacturing processes, are all composed of the following components.

Issued by

< K.Yoshimoto, Senior Product Engineer, Littelfuse, L.P.>

(1) Parts, sub-materials and unit parts

This document covers DO-214AA package & COMPAK package, RoHS-Compliant and Halogen-free series manufactured by Littelfuse Concord Wuxi Plant (Wuxi, China), supplied by Littelfuse, Inc. Please see page 2-5 for the complete list of part number covered by this report.

< Homogeneous Materials used >

Please see figure and table 1 on page 6 and table 2 on page 7-10 of this document.

(2) The analytical data on all measurable substances

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

Remarks :

Pb (lead) contained in die bonding solder (item 8 on page 6) and passivation glass (item 7) to be categorized as exempt in RoHS Annex 5 and 7.

Please refer to Annex 8 of this report for the extract of the applicable exemptions of RoHS (EU Directive 2002/95/EC)

Littelfuse Part Number covered by this report (1/3)
SIDACtor® Standard Devices

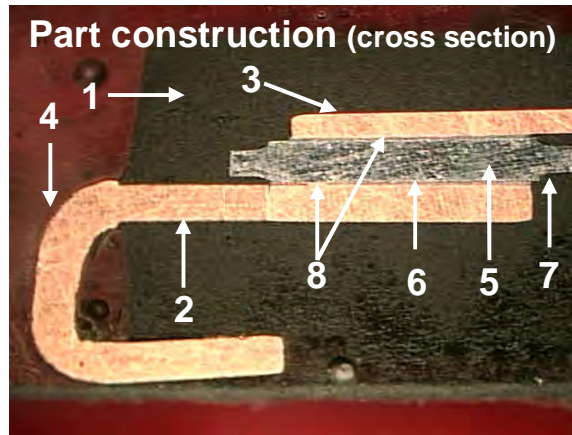
P0080SALRP	P0722SALRP	P1302SCLRP	P2302SCLRP
P0080SAMCLRP	P0722SBLRP	P1402SALRP	P2500SALRP
P0080SBLRP	P0722SCLRP	P1402SBLRP	P2500SBLRP
P0080SBMCLRP	P0900SALRP	P1500SALRP	P2500SCLRP
P0080SCLRP	P0900SBLRP	P1500SBLRP	P2500SCMCLRP
P0080SCMCLRP	P0900SCLRP	P1500SCLRP	P2600SALRP
P0080SDLRP	P0900SCMCLRP	P1500SCMCLRP	P2600SBLRP
P0220SALRP	P0900SDLRP	P1500SDLRP	P2600SCLRP
P0220SAMCLRP	P0901CA2LRP	P1502SALRP	P2600SCMCLRP
P0220SBLRP	P0901SALRP	P1502SBLRP	P2600SDLRP
P0220SBMCLRP	P0901SBLRP	P1502SCLRP	P2600STLRP
P0220SCLRP	P0901SCLRP	P1701CA2LRP	P2602SALRP
P0220SCMCLRP	P0902SALRP	P1701SALRP	P2602SBLRP
P0300SALRP	P0902SBLRP	P1701SBLRP	P2602SCLRP
P0300SAMCLRP	P0902SCLRP	P1701SCLRP	P3002SALRP
P0300SBLRP	P1100SALRP	P1800SALRP	P3002SBLRP
P0300SBMCLRP	P1100SBLRP	P1800SBLRP	P3002SCLRP
P0300SCLRP	P1100SCLRP	P1800SCLRP	P3100SALRP
P0300SCMCLRP	P1100SCMCLRP	P1800SCMCLRP	P3100SBLRP
P0640SALRP	P1100SDLRP	P1800SDLRP	P3100SCLRP
P0640SBLRP	P1101CA2LRP	P1800STLRP	P3100SCMCLRP
P0640SCLRP	P1101SALRP	P1802SALRP	P3100SDLRP
P0640SCMCLRP	P1101SBLRP	P1802SBLRP	P3100STLRP
P0640SDLRP	P1101SCLRP	P1802SCLRP	P3100SXLRP
P0641CA2LRP	P1102SALRP	P2000SALRP	P3500SALRP
P0641SALRP	P1102SBLRP	P2000SBLRP	P3500SBLRP
P0641SBLRP	P1102SCLRP	P2000SCLRP	P3500SCLRP
P0641SCLRP	P1200SALRP	P2000SCMCLRP	P3500SCMCLRP
P0642SALRP	P1200SBLRP	P2100SALRP	P3500SDLRP
P0642SBLRP	P1200SCLRP	P2100SBLRP	P3500STLRP
P0642SCLRP	P1200SCMCLRP	P2100SCLRP	P3502SALRP
P0720SALRP	P1300SALRP	P2100SCMCLRP	P3502SBLRP
P0720SBLRP	P1300SBLRP	P2300SALRP	P3502SCLRP
P0720SCLRP	P1300SCLRP	P2300SBLRP	P3502SCLRP
P0720SCMCLRP	P1300SCMCLRP	P2300SCLRP	P4202SALRP
P0720SDLRP	P1300SDLRP	P2300SCMCLRP	P4202SCLRP
P0721CA2LRP	P1301CA2LRP	P2300SDLRP	P4802SALRP
P0721SALRP	P1301SCLRP	P2300STLRP	P4802SCLRP
P0721SBLRP	P1302SALRP	P2302SALRP	P6002SALRP
P0721SCLRP	P1302SBLRP	P2302SBLRP	P6002SCLRP
			P7002SCLRP

Littelfuse Part Number covered by this report (2/3)
SIDACtor® Special Devices

P376P1500SCR	P923CRP	<p>Special device part numbers with base part number listed in table 1/3 (standard devices) are also automatically covered.</p> <p>Their typical part number format is PxxxPxxxxSxL^RP.</p> <p>"L" at 3rd digit from right denotes RoHS-compliant.</p>	
P486P3100SBRP	P923WRP		
P618P3100SCR	P925CRP		
P640P3100SBRP	P925WRP		
P641P3100SCR	P926CRP		
P651P3100SARP	P926WRP		
P653P2600SBRP	P927CRP		
P654P3100SBRP	P927WRP		
P654P3100SBRPH	P931CRP		
P654P3100SBRPHF	P931WRP		
P655P3500SBRP			
P658P0300SARP			
P659P0640SARP			
P674P1500SCR			
P675P1100SARP			
P676P0640SCR			
P677P1800SCR			
P678P0080SBRP			
P686P2300SBRP			
P688P1100SARP			
P689P1100SCR			
P691P0300SCMCRP			
P692P3500SDRP			
P695P0300SARP			
P697P1300SARP			
P698CRP			
P698WRP			
P707P3100SARP			
P708P2300SBRP			
P712P0640SARP			
P716P3500SARP			
P746P2600SDRP			
P760ALRP			
P760BLRP			
P760LRP			

Littelfuse Part Number covered by this report (3/3)
SIDAC, SiBOD™, Thyristor and BATTRAX® Devices

SIDAC	SiBOD	Thyristor	
K0820SRP	SMTBJ050A	L2N3RP	S4S3RP
K0900SRP	SMTBJ050B	L2N5RP	S4SRP
K1050SRP	SMTBJ056A-006	L2X3RP	S6N1RP
K1100SRP	SMTBJ070B	L2X5RP	S6S1RP
K1200SRP	SMTBJ100B	L4N3RP	S6S2RP
K1300SRP	SMTBJ108A-006	L4N5RP	S6S3RP
K1400SRP	SMTBJ120A	L4N6RP	S6SRP
K1500SRP	SMTBJ162A-006	L4N8RP	S813S4N1RP
K1800SRP	SMTBJ170A	L4X3RP	S827S4S2RP
K1801SRP	SMTBJ180A-006	L4X5RP	S828S4S1RP
K2000SHRP	SMTBJ200A	L4X6RP	S853S4S3RP
K2000SRP	SMTBJ200B	L4X8RP	S856S4SRP
K2200SHRP	SMTBJ216A-006	L6N3RP	S872S4S2RP
K2200SRP	SMTBJ240A	L6N5RP	S893S4SRP
K2400SHRP		L6N6RP	
K2400SRP		L6N8RP	
K2500SHRP		L6X3RP	
K2500SRP		L6X5RP	BATTRAX®
K222K1500SRP		L6X6RP	
K226K1500SRP		L6X8RP	B1100CALRP
K240K2500SRP		Q2N3RP	B1100CCLRP
K260K2500SRP		Q2N4RP	B1160CALRP
K282K2500SRP		Q2X3RP	B1160CCLRP
		Q2X4RP	B1200CALRP
		Q4N3RP	B1200CCLRP
		Q4N4RP	B2050CCLRP
		Q4X3RP	
		Q4X4RP	
		Q6N3RP	
		Q6N4RP	PLED
		Q6X3RP	
		Q6X4RP	PLED6S
		S2N1RP	PLED9S
		S2S1RP	PLED13S
		S2S2RP	PLED18S
		S2S3RP	
		S2SRP	
		S4N1RP	



Material Used (where used)

This photo is for explanation only.
 Actual assembly design may be different.

Table 1: Homogeneous Material Used

#	Description	Name of Material	Type	Analysis data
1	Molding compound	epoxy resin	plastic	annex 1
2	Lead frame	copper alloy	metal	annex 2
3	Clip	copper alloy	metal	annex 3
4	Matte-Tin plating	Tin	metal	annex 4
5	Silicon die	silicon	metal	annex 5, tested as Nickel-plated wafer.
6	Nickel electrode	nickel	metal	
7	Passivation glass	glass	glass	annex 6. Pb in this glass is exempted by RoHS Annex 5. Please refer to Annex 8 for the RoHS exemption.
8	Die bonding solder	solder	metal	annex 7. Pb in this solder is exempted by RoHS Annex 7. Please refer to Annex 8 for the RoHS exemption.

Table 2-1: RoHS-regulated substance in raw materials

Components & Raw Materials	Analytical Test Result						
	Cd Cadmium	Cr Chromium	Hg Mercury	Pb Lead	PBB	PBDE	TOTAL HALOGEN
As Component Total Values of P3100SDLRP* ¹ , as representative products of all DO-214 and COMPAK package See Annex 8 for whole component test.	< 2ppm	< 2ppm	< 2ppm	<10 ppm* ² (3.0%* ³)	< 5ppm	< 5ppm	< 105ppm
Epoxy Resin compound See Annex 1 for the detail.	< 2ppm	< 1ppm	< 2ppm	< 2ppm	< 5ppm	< 5ppm	105ppm
Lead frame / Clip (Copper Alloy, CDA194 / 110) See Annex 2 & 3 for the detail.	< 2ppm	< 2ppm	< 2ppm	23ppm* ⁴	---	---	---
Outside lead finish (Matte-Tin plated, Sn 100%) See Annex 4 & 4A for the detail.	< 2ppm	< 2ppm	< 2ppm	47 ppm* ⁴	< 5ppm	< 5ppm	<50ppm
Silicon Die (Silicon + Ni electrode) See Annex 5 for the detail.	< 2ppm	< 2ppm	< 2ppm	< 2ppm* ⁴	< 5ppm	< 5ppm	<50ppm
Passivation Glass See Annex 6 for the detail.	< 2ppm	< 2ppm	< 2ppm	40% * ⁵	< 5ppm	< 5ppm	<50ppm
Die Bonding Solder (Pb/Sn=90/10) See Annex 7 for the detail.	< 2ppm	< 2ppm	< 2ppm	90% * ⁶	< 5ppm	< 5ppm	<50ppm

- *1 Other products may contain equal or less amount of Pb as P3100SDLRP value shown here, but not more than the value shown here.
- *2 Less than 10ppm Pb content overall, excluding Pb from the die bonding solder and the passivation glass on the silicon die.
- *3 Maximum 3.0wt% or 3.0mg of Pb (lead) content overall, including the RoHS-exempted use of Pb
- *4 Pb (lead) contained in lead frame and plating is not exempted from restriction by RoHS, but considered as process contamination. Littelfuse does not add Pb (lead) intentionally.
- *5 Pb (lead) contained in passivation glass is exempted from restriction by RoHS Annex 5.
- *6 Pb (lead) contained in die bonding solder is exempted from restriction by RoHS Annex 7, first item.
Please refer to Annex 8 of this report for the applicable exemptions of RoHS (EU Directive 2002/95/EC)

Annex 1: Analysis Result of Molding Compound (Page 1 of 7)



TEST REPORT

NUMBER: WUXH00002757

APPLICANT: CONCORD SEMICONDUCTOR(WUXI) CO., LTD.
DATE: AUG 06, 2010
EAST 1#, ZHENFA 6 ROAD, SHUO FANG
INDUSTRIAL PARK WUXI NATIONAL HIGH-
TECH DEVELOPMENT ZONE,
WUXI, JIANGSU, CHINA
ATTN: ZHANG XIAOPENG

SAMPLE DESCRIPTION:

ONE(1)PIECE OF SUBMITTED SAMPLE SAID TO BE :**BLACK EPOXY**.
ITEM NAME : EPOXY MOLDING COMPOUND.
VENDOR : COOKSON ELECTONICS SEMICONDUCTOR PRODUCTS.
COMPONENT OR PART NO. : CK-2000A.
TEST ITEM : Pb, Cd, Hg, CrVI, PBB PBDE, F, Cl, Br, I.

TESTS CONDUCTED:

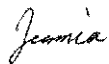
AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

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

TO BE CONTINUED

PREPARED AND CHECKED BY:
FOR INTERTEK TESTING SERVICES WUXI LTD.



JESSICA LU
GENERAL MANAGER

PAGE 1 OF 7

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Annex 1: Analysis Result of Molding Compound (Page 2 of 7)



TEST REPORT

NUMBER: WUXH00002757

TESTS CONDUCTED

(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 ⁶⁺) CONTENT (mg/kg) (FOR NON-METAL)	ND
POLYBROMINATED BIPHENYLS (PBBs) (mg/kg)	
MONOBROMO BIPHENYLS (MonoBB)	ND
DIBROMO BIPHENYLS (DiBB)	ND
TRIBROMO BIPHENYLS (TriBB)	ND
TETRABROMO BIPHENYLS (TetraBB)	ND
PENTABROMO BIPHENYLS (PentaBB)	ND
HEXABROMO BIPHENYLS (HexaBB)	ND
HEPTABROMO BIPHENYLS (HeptaBB)	ND
OCTABROMO BIPHENYLS (OctaBB)	ND
NONABROMO BIPHENYLS (NonaBB)	ND
DECABROMO BIPHENYL (DecaBB)	ND
POLYBROMINATED DIPHENYL ETHERS (PBDEs) (mg/kg)	
MONOBROMO DIPHENYL ETHERS (MonoBDE)	ND
DIBROMO DIPHENYL ETHERS (DiBDE)	ND
TRIBROMO DIPHENYL ETHERS (TriBDE)	ND
TETRABROMO DIPHENYL ETHERS (TetraBDE)	ND
PENTABROMO DIPHENYL ETHERS (PentaBDE)	ND
HEXABROMO DIPHENYL ETHERS (HexaBDE)	ND
HEPTABROMO DIPHENYL ETHERS (HeptaBDE)	ND
OCTABROMO DIPHENYL ETHERS (OctaBDE)	ND
NONABROMO DIPHENYL ETHERS (NonaBDE)	ND
DECABROMO DIPHENYL ETHER (DecaBDE)	ND

REMARK:

mg/kg = MILLIGRAM PER KILOGRAM BASED ON DRY WEIGHT= ppm

ND = NOT DETECTED

TO BE CONTINUED

Annex 1: Analysis Result of Molding Compound (Page 3 of 7)



TEST REPORT

NUMBER: WUXH00002757

TESTS CONDUCTED

(B) RoHS REQUIREMENT:

RESTRICTED SUBSTANCES	LIMITS
CADMIUM (Cd)	0.01% (100 mg/kg)
LEAD (Pb)	0.1% (1000 mg/kg)
MERCURY (Hg)	0.1% (1000 mg/kg)
CHROMIUM (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
POLYBROMINATED BIPHENYLS (PBBs)	0.1% (1000 mg/kg)
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	0.1% (1000 mg/kg)

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

(c) TEST METHOD:

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
CADMIUM (Cd) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
LEAD (Pb) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
MERCURY (Hg) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR NON-METAL)	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ALKALINE DIGESTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER	1 mg/kg
POLYBROMINATED BIPHENYLS (PBBs) & POLYBROMINATED DIPHENYL ETHERS (PBDEs)	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS AND FURTHER HPLC CONFIRMATION WHEN NECESSARY.	5 mg/kg

DATE SAMPLE RECEIVED:AUG 02, 2010

TESTING PERIOD:AUG 02, 2010 TO AUG 05, 2010

TO BE CONTINUED

PAGE 3 OF 7

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Annex 1: Analysis Result of Molding Compound (Page 4 of 7)

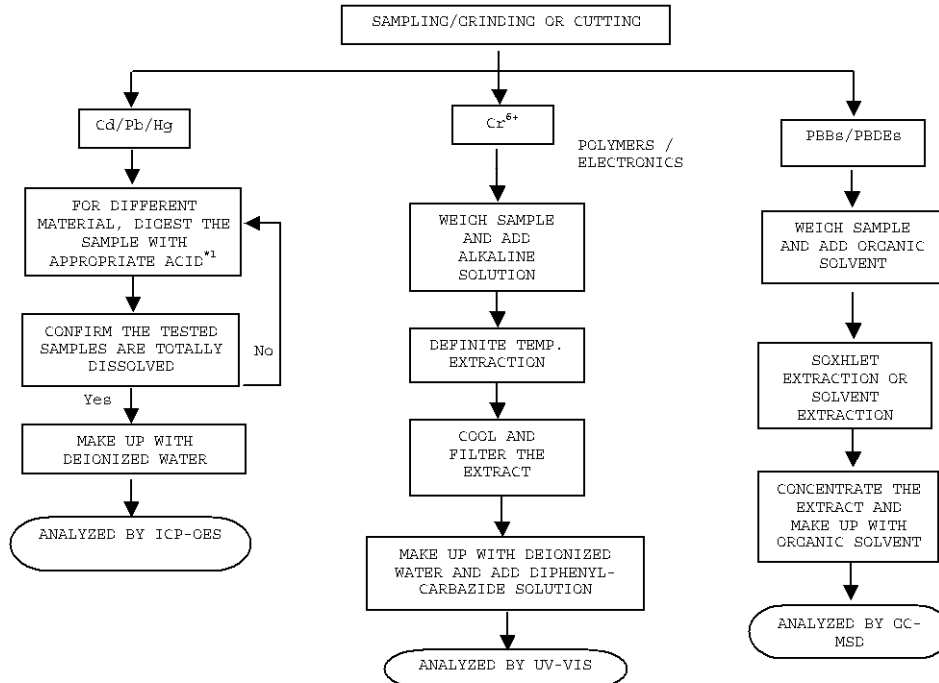


TEST REPORT

NUMBER: WUXH00002757

TESTS CONDUCTED

(D) MEASUREMENT FLOWCHART:
TEST FOR Cd/Pb/Hg/Cr (VI)/PBBs/PBDEs CONTENTS
REFERENCE STANDARD: IEC 62321 EDITION 1.0: 2008



CHEMIST: INORGANIC (ANN LUO/FRED WANG/ALLY WAN)
ORGANIC (JENNY XU/CHERRY SUN)

REMARKS:

*1: LIST OF APPROPRIATE ACID:

MATERIAL	ACID ADDED FOR DIGESTION
POLYMERS	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
METALS	HNO ₃ , HCl, HF
ELECTRONICS	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

*2: IF THE RESULT OF SPOT TEST IS POSITIVE, CHROMIUM VI WOULD BE DETERMINED AS DETECTED.

TO BE CONTINUED

Annex 1: Analysis Result of Molding Compound (Page 5 of 7)



TEST REPORT

NUMBER: WUXH00002757

TESTS CONDUCTED

(I) TEST RESULT SUMMARY :

HALOGEN CONTENT :

TESTING ITEM	RESULT (ppm)
FLUORINE (F) CONTENT	ND
CHLORINE (Cl) CONTENT	105
BROMINE (Br) CONTENT	ND
IODINE (I) CONTENT	ND

REMARKS : ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

DATE SAMPLE RECEIVE: AUG 02, 2010

TEST PERIOD: AUG 02, 2010 TO AUG 05, 2010

(II) TEST METHOD :

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
HALOGEN (F, Cl, Br, I) CONTENT	WITH REFERENCE TO IEC 61189-2:2006 BY COMBUSTION FLASK AND DETERMINED BY ION CHROMATOGRAPHY	50 ppm

REMARKS : REPORTING LIMIT = QUANTITATION LIMIT OF ANALYTE IN SAMPLE

TO BE CONTINUED

PAGE 5 OF 7

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Annex 1: Analysis Result of Molding Compound (Page 6 of 7)



TEST REPORT

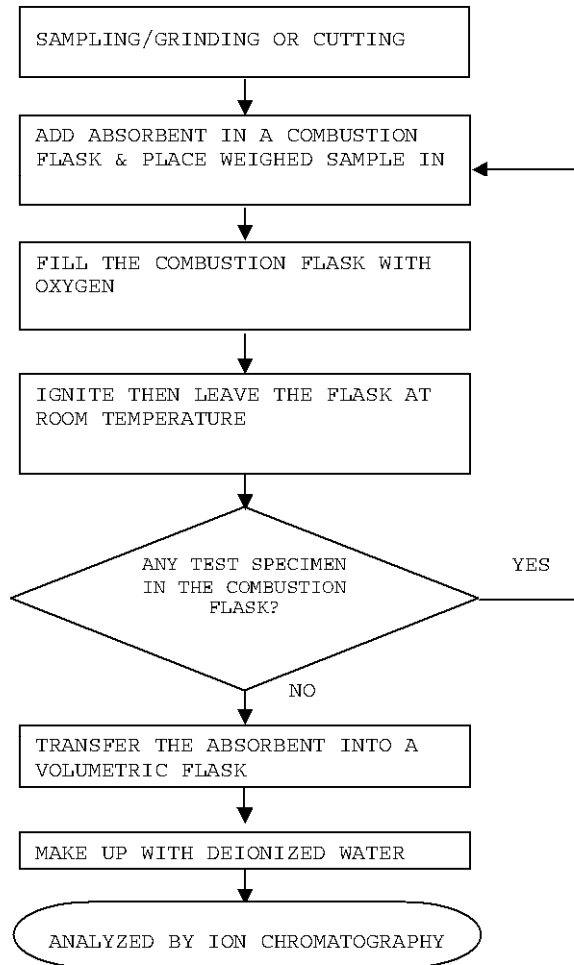
NUMBER: WUXH00002757

TESTS CONDUCTED

(III) MEASUREMENT FLOWCHART:

TEST FOR HALOGEN CONTENT

REFERENCE METHOD: IEC 61189-2 TEST 2C12



CHEMIST: FRED WANG/ ALLY WAN

TO BE CONTINUED

Annex 1: Analysis Result of Molding Compound (Page 7 of 7)

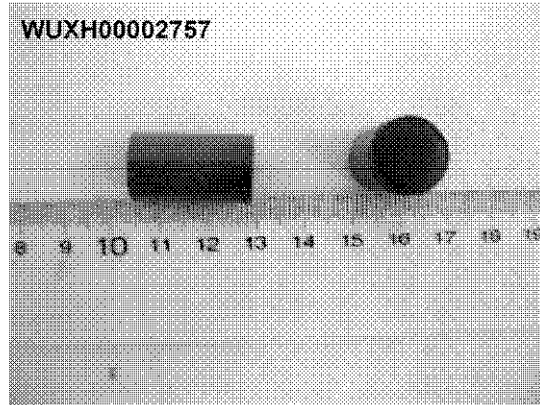


TEST REPORT

NUMBER: WUXH00002757

TESTS CONDUCTED

PHOTO



END OF REPORT

Annex 2: Analysis Result of Lead frame (Page 1 of 5)



TEST REPORT

NUMBER: WUXH00002730

APPLICANT: CONCORD SEMICONDUCTOR(WUXI) CO., LTD.
DATE: AUG 06, 2010
EAST 1#, ZHENFA 6 ROAD, SHUO FANG
INDUSTRIAL PARK WUXI NATIONAL HIGH-
TECH DEVELOPMENT ZONE,
WUXI, JIANGSU, CHINA
ATTN: ZHANG XIAOPENG

SAMPLE DESCRIPTION:

ONE (1) PIECE OF SUBMITTED SAMPLE SAID TO BE : **COPPER METAL**.
ITEM NAME : LEAD FRAME/LEAD FRAME MATRIX/TO-220 LEAD
FRAME/HEATSINK.
VENDOR : JINAN JIHLONG TECHNOLOGY CO., LTD.
COMPONENT OR PART NO. : COPPER.
TEST ITEM : Pb, Cd, Hg, CrVI.

TESTS CONDUCTED:


AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

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

TO BE CONTINUED

PREPARED AND CHECKED BY:
FOR INTERTEK TESTING SERVICES WUXI LTD.



JESSICA LU
GENERAL MANAGER

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PAGE 1 OF 5

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



TEST REPORT

NUMBER: WUXH00002730

TESTS CONDUCTED

(A) TEST RESULT SUMMARY:

TESTING ITEM	RESULT
CADMIUM (Cd) CONTENT (mg/kg)	ND
LEAD (Pb) CONTENT (mg/kg)	23
MERCURY (Hg) CONTENT (mg/kg)	ND
CHROMIUM (VI) (Cr ⁶⁺) RESULT (BY BOILING WATER EXTRACTION ON METAL) (mg/kg WITH 50cm ²)	ND

REMARK:

mg/kg = MILLIGRAM PER KILOGRAM BASED ON DRY WEIGHT= ppm
 mg/kg WITH 50cm² = MILLIGRAM PER KILOGRAM WITH 50 SQUARE CENTIMETER
 ND = NOT DETECTED

(B) RoHS REQUIREMENT:

RESTRICTED SUBSTANCES	LIMITS
CADMIUM (Cd)	0.01% (100 mg/kg)
LEAD (Pb)	0.1% (1000 mg/kg)
MERCURY (Hg)	0.1% (1000 mg/kg)
CHROMIUM (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

 TO BE CONTINUED

Annex 2: Analysis Result of Lead frame (Page 3 of 5)



TEST REPORT

NUMBER: WUXH00002730

TESTS CONDUCTED
(c) TEST METHOD:

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
CADMIUM (Cd) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
LEAD (Pb) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
MERCURY (Hg) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR METAL)	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY BOILING WATER EXTRACTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER	0.02mg/kg WITH 50cm ² (IN TESTING SOLUTION)

DATE SAMPLE RECEIVED:AUG 02, 2010
TESTING PERIOD:AUG 02, 2010 TO AUG 05, 2010

TO BE CONTINUED

Annex 2: Analysis Result of Lead frame (Page 4 of 5)

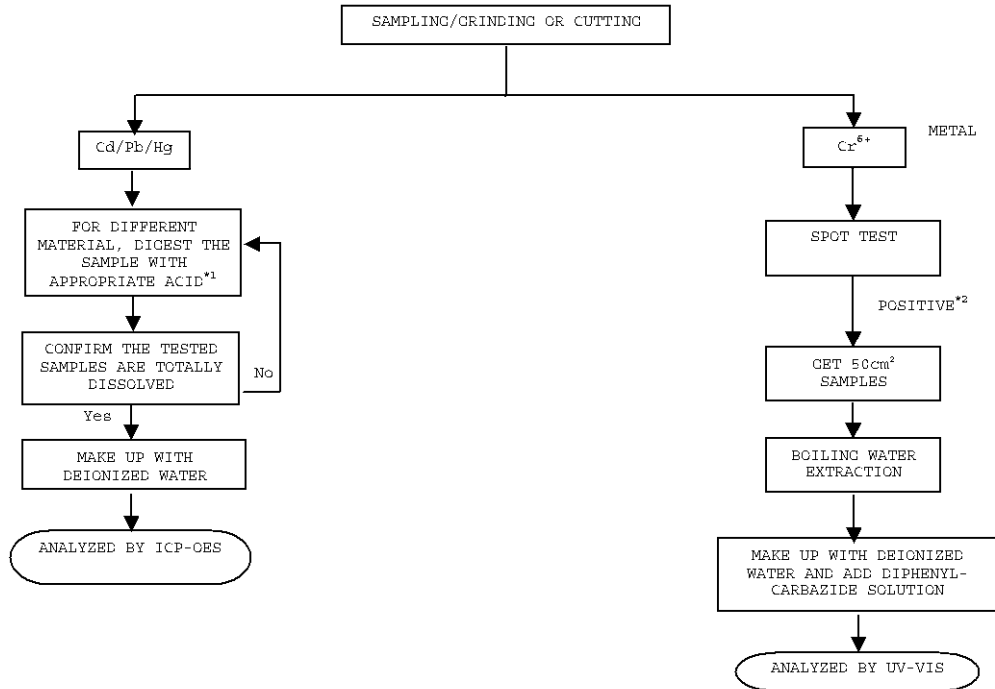


TEST REPORT

NUMBER: WUXH00002730

TESTS CONDUCTED

(D) MEASUREMENT FLOWCHART:
 TEST FOR Cd/Pb/Hg/Cr (VI) CONTENTS
 REFERENCE STANDARD: IEC 62321 EDITION 1.0: 2008



CHEMIST: INORGANIC (ANN LUO/FRED WANG/ALLY WAN)

REMARKS:

*1: LIST OF APPROPRIATE ACID:

MATERIAL	ACID ADDED FOR DIGESTION
POLYMERS	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
METALS	HNO ₃ , HCl, HF
ELECTRONICS	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

*2: IF THE RESULT OF SPOT TEST IS POSITIVE, CHROMIUM VI WOULD BE DETERMINED AS DETECTED.

 TO BE CONTINUED

PHOTO

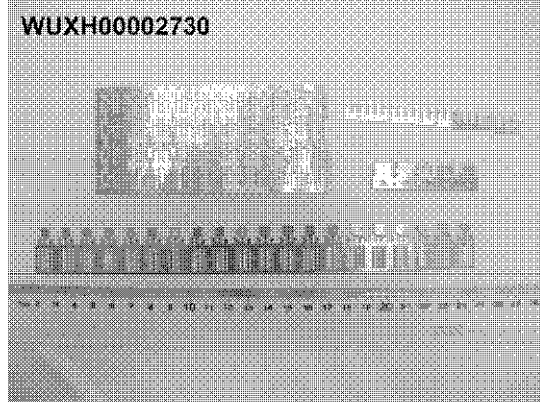
Annex 2: Analysis Result of Lead frame (Page 5 of 5)



TEST REPORT

NUMBER: WUXH00002730

TESTS CONDUCTED



END OF REPORT

Annex 3: Analysis Result of Clip (Page 1 of 5)



TEST REPORT

NUMBER: WUXH00002736

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 06, 2010

SAMPLE DESCRIPTION:

ONE (1) PIECE OF SUBMITTED SAMPLE SAID TO BE : **COPPER METAL**.
 ITEM NAME : CLIP.
 VENDOR : G-SHANK PRECISION MACHINERY (SUZHOU) CO., LTD.
 COMPONENT OR PART NO. : COPPER.
 TEST ITEM : Pb, Cd, Hg, CrVI.

TESTS CONDUCTED:

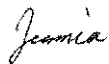
AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

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

TO BE CONTINUED

PREPARED AND CHECKED BY:
FOR INTERTEK TESTING SERVICES WUXI LTD.



JESSICA LU
GENERAL MANAGER

Annex 3: Analysis Result of Clip (Page 2 of 5)



TEST REPORT

NUMBER: WUXH00002736

TESTS CONDUCTED

(A) TEST RESULT SUMMARY:

TESTING ITEM	RESULT
CADMIUM (Cd) CONTENT (mg/kg)	ND
LEAD (Pb) CONTENT (mg/kg)	12
MERCURY (Hg) CONTENT (mg/kg)	ND
CHROMIUM (VI) (Cr ⁶⁺) RESULT (BY BOILING WATER EXTRACTION ON METAL) (mg/kg WITH 50cm ²)	ND

REMARK:

mg/kg = MILLIGRAM PER KILOGRAM BASED ON DRY WEIGHT= ppm
 mg/kg WITH 50cm² = MILLIGRAM PER KILOGRAM WITH 50 SQUARE CENTIMETER
 ND = NOT DETECTED

(B) RoHS REQUIREMENT:

RESTRICTED SUBSTANCES	LIMITS
CADMIUM (Cd)	0.01% (100 mg/kg)
LEAD (Pb)	0.1% (1000 mg/kg)
MERCURY (Hg)	0.1% (1000 mg/kg)
CHROMIUM (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

 TO BE CONTINUED

Annex 3: Analysis Result of Clip (Page 3 of 5)



TEST REPORT

NUMBER: WUXH00002736

TESTS CONDUCTED
(c) TEST METHOD:

<u>TESTING ITEM</u>	<u>TESTING METHOD</u>	<u>REPORTING LIMIT</u>
CADMIUM (Cd) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
LEAD (Pb) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
MERCURY (Hg) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR METAL)	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY BOILING WATER EXTRACTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER	0.02mg/kg WITH 50cm ² (IN TESTING SOLUTION)

DATE SAMPLE RECEIVED:AUG 02, 2010
TESTING PERIOD:AUG 02, 2010 TO AUG 05, 2010

TO BE CONTINUED

Annex 3: Analysis Result of Clip (Page 4 of 5)

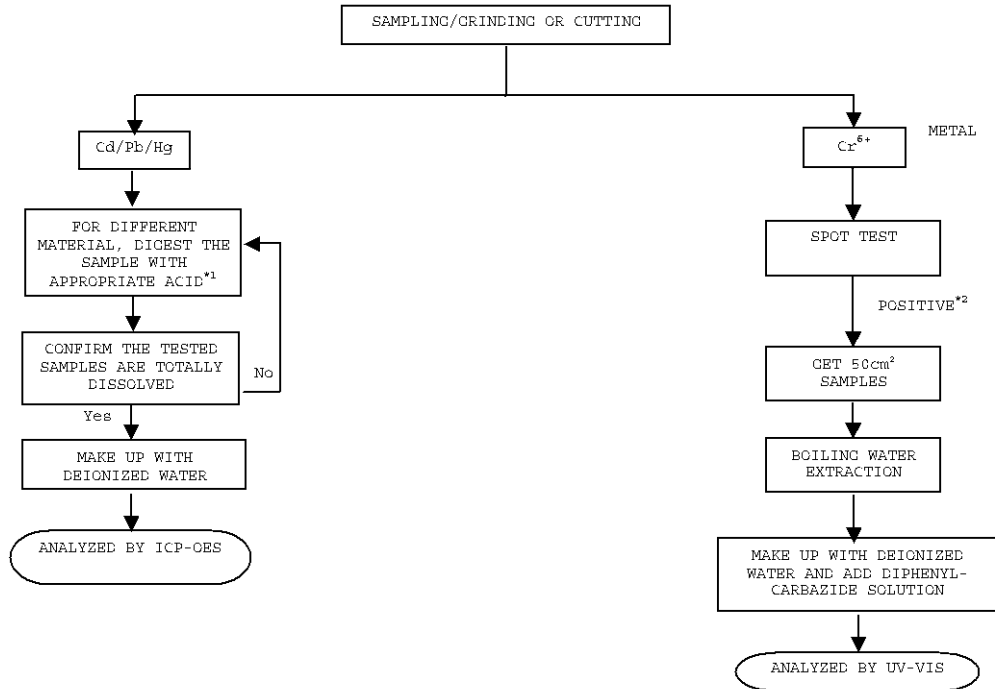


TEST REPORT

NUMBER: WUXH00002736

TESTS CONDUCTED

(D) MEASUREMENT FLOWCHART:
 TEST FOR Cd/Pb/Hg/Cr (VI) CONTENTS
 REFERENCE STANDARD: IEC 62321 EDITION 1.0: 2008



CHEMIST: INORGANIC (ANN LUO/FRED WANG/ALLY WAN)

REMARKS:

*1: LIST OF APPROPRIATE ACID:

MATERIAL	ACID ADDED FOR DIGESTION
POLYMERS	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
METALS	HNO ₃ , HCl, HF
ELECTRONICS	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

*2: IF THE RESULT OF SPOT TEST IS POSITIVE, CHROMIUM VI WOULD BE DETERMINED AS DETECTED.

 TO BE CONTINUED

PHOTO

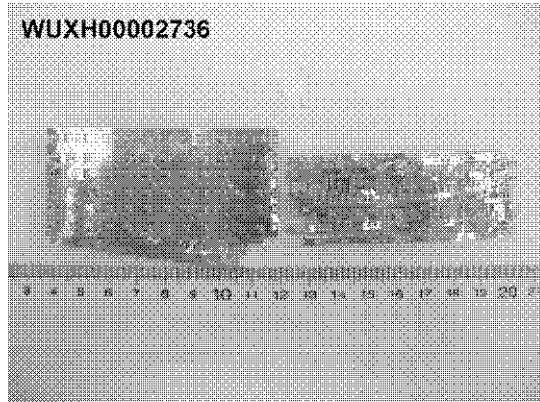
Annex 3: Analysis Result of Clip (Page 5 of 5)



TEST REPORT

NUMBER: WUXH00002736

TESTS CONDUCTED



END OF REPORT

Annex 4: Analysis Result of Matte-Tin plating (page 1 of 7)



TEST REPORT

NUMBER: WUXH00002766

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 06, 2010

SAMPLE DESCRIPTION:

ONE (1) PIECE OF SUBMITTED SAMPLE SAID TO BE : **SILVER METAL PIN AND BLACK PLASTIC BODY.**

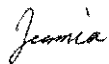
ITEM NAME : TIN PLATING-SMD.
VENDOR : BANDL (KUNSHAN) INTERNATIONAL CO.,
COMPONENT OR PART NO. : PURE MATTE TIN.
TEST ITEM : Pb, Cd, Hg, CrVI, F, Cl, Br, I.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

TO BE CONTINUED

PREPARED AND CHECKED BY:
FOR INTERTEK TESTING SERVICES WUXI LTD.



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PAGE 1 OF 7

Annex 4: Analysis Result of Matte-Tin plating (page 2 of 7)



TEST REPORT

NUMBER: WUXH00002766

TESTS CONDUCTED

(A) TEST RESULT SUMMARY:

TESTING ITEM	RESULT
CADMIUM (Cd) CONTENT (mg/kg)/PLATING	ND
LEAD (Pb) CONTENT (mg/kg)/PLATING	47
MERCURY (Hg) CONTENT (mg/kg)/PLATING	ND
CHROMIUM (VI) (Cr ⁶⁺) RESULT (BY BOILING WATER EXTRACTION ON METAL) (mg/kg WITH 50cm ²)	ND

REMARK:

mg/kg = MILLIGRAM PER KILOGRAM BASED ON DRY WEIGHT= ppm

mg/kg WITH 50cm² = MILLIGRAM PER KILOGRAM WITH 50 SQUARE CENTIMETER

ND = NOT DETECTED

TEST COMPONENT : SILVER 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 ⁶⁺)	0.1% (1000 mg/kg)

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

TO BE CONTINUED

Annex 4: Analysis Result of Matte-Tin plating (page 3 of 7)



TEST REPORT

NUMBER: WUXH00002766

TESTS CONDUCTED

(c) TEST METHOD:

<u>TESTING ITEM</u>	<u>TESTING METHOD</u>	<u>REPORTING LIMIT</u>
CADMIUM (Cd) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
LEAD (Pb) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
MERCURY (Hg) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR METAL)	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY BOILING WATER EXTRACTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER	0.02mg/kg WITH 50cm ² (IN TESTING SOLUTION)

DATE SAMPLE RECEIVED:AUG 02, 2010

TESTING PERIOD:AUG 02, 2010 TO AUG 05, 2010

TO BE CONTINUED

PAGE 3 OF 7

Intertek Testing Services Wuxi Ltd.

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Annex 4: Analysis Result of Matte-Tin plating (page 4 of 7)

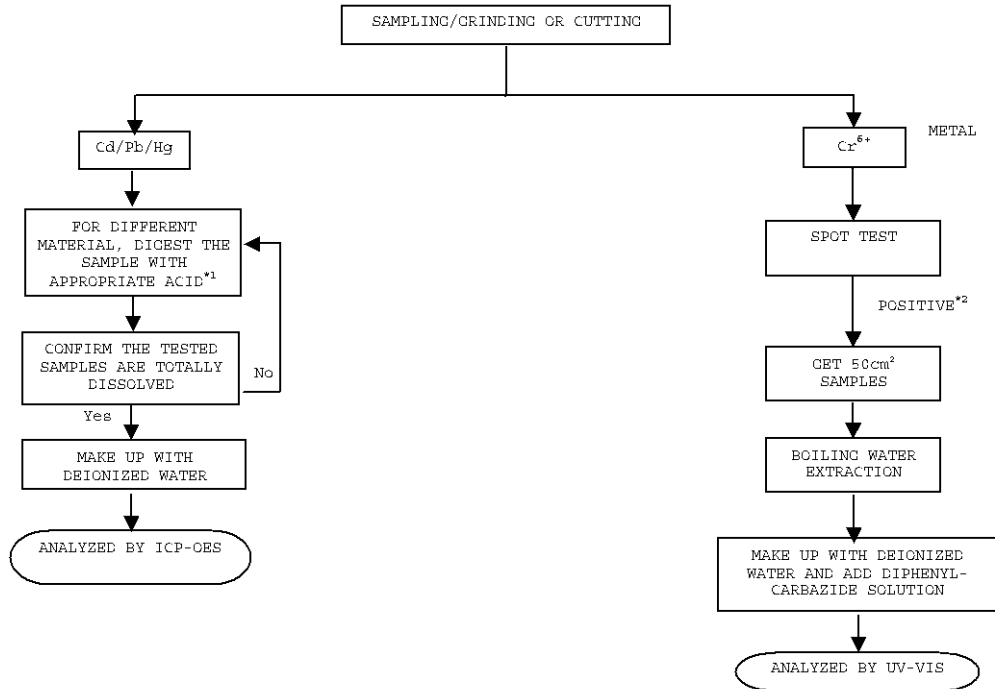
Intertek

TEST REPORT

NUMBER: WUXH00002766

TESTS CONDUCTED

(D) MEASUREMENT FLOWCHART:
 TEST FOR Cd/Pb/Hg/Cr (VI) CONTENTS
 REFERENCE STANDARD: IEC 62321 EDITION 1.0: 2008



CHEMIST: INORGANIC (ANN LUO/FRED WANG/ALLY WAN)

REMARKS:

*1: LIST OF APPROPRIATE ACID:

MATERIAL	ACID ADDED FOR DIGESTION
POLYMERS	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
METALS	HNO ₃ , HCl, HF
ELECTRONICS	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

*2: IF THE RESULT OF SPOT TEST IS POSITIVE, CHROMIUM VI WOULD BE DETERMINED AS DETECTED.

 TO BE CONTINUED

Annex 4: Analysis Result of Matte-Tin plating (page 5 of 7)



TEST REPORT

NUMBER: WUXH00002766

TESTS CONDUCTED

(I) TEST RESULT SUMMARY :

HALOGEN CONTENT :

TESTING ITEM	RESULT (ppm)
FLUORINE (F) CONTENT	ND
CHLORINE (Cl) CONTENT	ND
BROMINE (Br) CONTENT	ND
IODINE (I) CONTENT	ND

REMARKS : ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

DATE SAMPLE RECEIVE: AUG 02, 2010

TEST PERIOD: AUG 02, 2010 TO AUG 05, 2010

(II) TEST METHOD :

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
HALOGEN (F, Cl, Br, I) CONTENT	WITH REFERENCE TO IEC 61189-2:2006 BY COMBUSTION FLASK AND DETERMINED BY ION CHROMATOGRAPHY	50 ppm

REMARKS : REPORTING LIMIT = QUANTITATION LIMIT OF ANALYTE IN SAMPLE

TO BE CONTINUED

PAGE 5 OF 7

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Annex 4: Analysis Result of Matte-Tin plating (page 6 of 7)



TEST REPORT

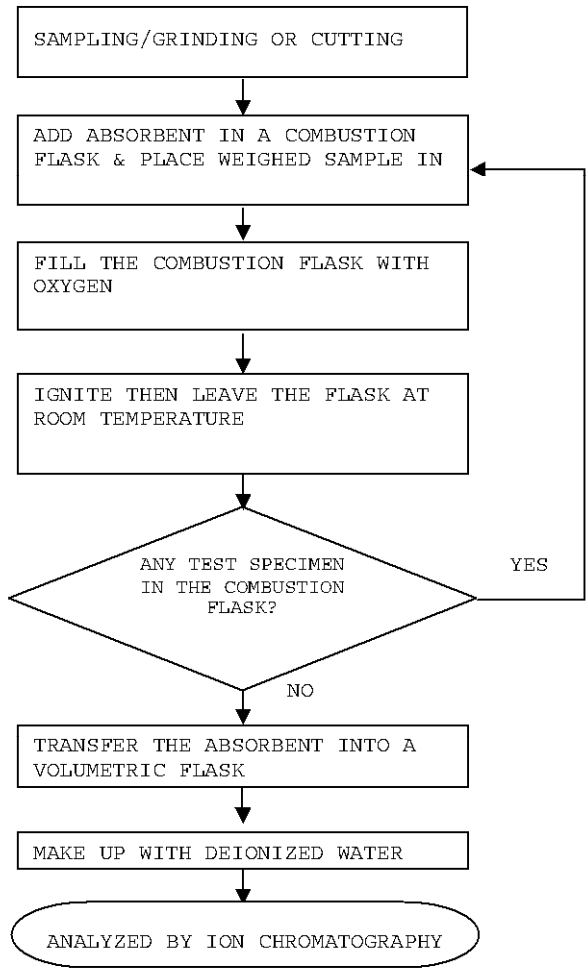
NUMBER: WUXH00002766

TESTS CONDUCTED

(III) MEASUREMENT FLOWCHART:

TEST FOR HALOGEN CONTENT

REFERENCE METHOD: IEC 61189-2 TEST 2C12



CHEMIST: FRED WANG/ ALLY WAN

TO BE CONTINUED

Annex 4: Analysis Result of Matte-Tin plating (page 7 of 7)

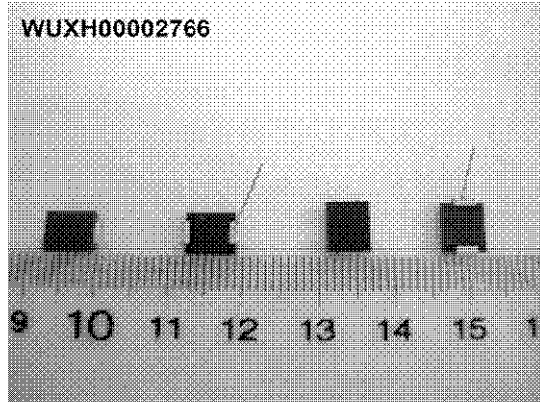


TEST REPORT

NUMBER: WUXH00002766

TESTS CONDUCTED

PHOTO



END OF REPORT

PAGE 7 OF 7

Intertek Testing Services Wuxi Ltd.

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Annex 5: Analysis Result of Ni-plated Wafer (Page 1 of 7)



TEST REPORT

NUMBER: WUXH00002719

APPLICANT: CONCORD SEMICONDUCTOR(WUXI) CO., LTD.
DATE: AUG 06, 2010
EAST 1#, ZHENFA 6 ROAD, SHUO FANG
INDUSTRIAL PARK WUXI NATIONAL HIGH-
TECH DEVELOPMENT ZONE,
WUXI, JIANGSU, CHINA
ATTN: ZHANG XIAOPENG

SAMPLE DESCRIPTION:

ONE(1)PIECE OF SUBMITTED SAMPLE SAID TO BE :**SILVER GREY METAL.**
ITEM NAME : SILICON WAFER WITH NICKEL PLATING.
VENDOR : CONCORD.
COMPONENT OR PART NO. : SILICON+NICKEL.
TEST ITEM : Pb, Cd, Hg, CrVI, PBB PBDE, F, Cl, Br, I.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

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

TO BE CONTINUED

PREPARED AND CHECKED BY:
FOR INTERTEK TESTING SERVICES WUXI LTD.



JESSICA LU
GENERAL MANAGER

Annex 5: Analysis Result of Ni-plated Wafer (Page 2 of 7)



TEST REPORT

NUMBER: WUXH00002719

TESTS CONDUCTED

(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 ⁶⁺) RESULT (BY BOILING WATER EXTRACTION ON METAL) (mg/kg WITH 50cm ²)	ND
POLYBROMINATED BIPHENYLS (PBBs) (mg/kg)	
MONOBROMO BIPHENYLS (MonoBB)	ND
DIBROMO BIPHENYLS (DiBB)	ND
TRIBROMO BIPHENYLS (TriBB)	ND
TETRABROMO BIPHENYLS (TetraBB)	ND
PENTABROMO BIPHENYLS (PentaBB)	ND
HEXABROMO BIPHENYLS (HexaBB)	ND
HEPTABROMO BIPHENYLS (HeptaBB)	ND
OCTABROMO BIPHENYLS (OctaBB)	ND
NONABROMO BIPHENYLS (NonaBB)	ND
DECABROMO BIPHENYL (DecaBB)	ND
POLYBROMINATED DIPHENYL ETHERS (PBDEs) (mg/kg)	
MONOBROMO DIPHENYL ETHERS (MonoBDE)	ND
DIBROMO DIPHENYL ETHERS (DiBDE)	ND
TRIBROMO DIPHENYL ETHERS (TriBDE)	ND
TETRABROMO DIPHENYL ETHERS (TetraBDE)	ND
PENTABROMO DIPHENYL ETHERS (PentaBDE)	ND
HEXABROMO DIPHENYL ETHERS (HexaBDE)	ND
HEPTABROMO DIPHENYL ETHERS (HeptaBDE)	ND
OCTABROMO DIPHENYL ETHERS (OctaBDE)	ND
NONABROMO DIPHENYL ETHERS (NonaBDE)	ND
DECABROMO DIPHENYL ETHER (DecaBDE)	ND

REMARK:

mg/kg = MILLIGRAM PER KILOGRAM BASED ON DRY WEIGHT= ppm

ND = NOT DETECTED

mg/kg WITH 50cm² = MILLIGRAM PER KILOGRAM WITH 50 SQUARE CENTIMETER

TO BE CONTINUED

Annex 5: Analysis Result of Ni-plated Wafer (Page 3 of 7)



TEST REPORT

NUMBER: WUXH00002719

TESTS CONDUCTED

(B) RoHS REQUIREMENT:

RESTRICTED SUBSTANCES	LIMITS
CADMIUM (Cd)	0.01% (100 mg/kg)
LEAD (Pb)	0.1% (1000 mg/kg)
MERCURY (Hg)	0.1% (1000 mg/kg)
CHROMIUM (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
POLYBROMINATED BIPHENYLS (PBBs)	0.1% (1000 mg/kg)
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	0.1% (1000 mg/kg)

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

(c) TEST METHOD:

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
CADMIUM (Cd) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
LEAD (Pb) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
MERCURY (Hg) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR 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 ² (IN TESTING SOLUTION)
POLYBROMINATED BIPHENYLS (PBBs) & POLYBROMINATED DIPHENYL ETHERS (PBDEs)	WITH REFERENCE TO IEC IEC 62321 EDITION 1.0: 2008, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS AND FURTHER HPLC CONFIRMATION WHEN NECESSARY.	5 mg/kg

DATE SAMPLE RECEIVED:AUG 02, 2010

TESTING PERIOD:AUG 02, 2010 TO AUG 05, 2010

TO BE CONTINUED

Annex 5: Analysis Result of Ni-plated Wafer (Page 4 of 7)

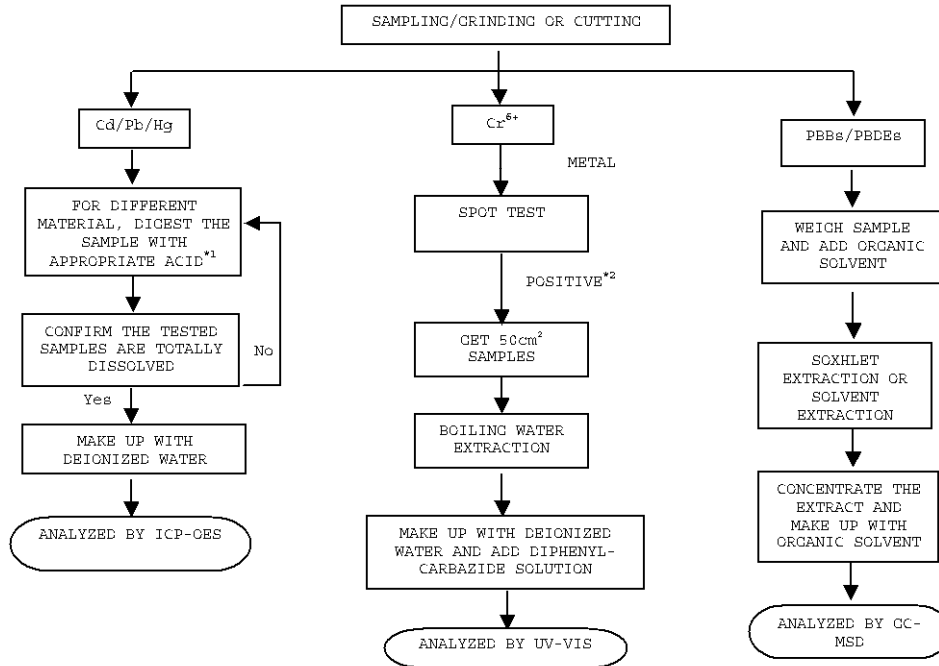


TEST REPORT

NUMBER: WUXH00002719

TESTS CONDUCTED

(D) MEASUREMENT FLOWCHART:
TEST FOR Cd/Pb/Hg/Cr (VI)/PBBs/PBDEs CONTENTS
REFERENCE STANDARD: IEC 62321 EDITION 1.0: 2008



CHEMIST: INORGANIC (ANN LUO/FRED WANG/ALLY WAN)
ORGANIC (JENNY XU/CHERRY SUN)

REMARKS:

*1: LIST OF APPROPRIATE ACID:

MATERIAL	ACID ADDED FOR DIGESTION
POLYMERS	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
METALS	HNO ₃ , HCl, HF
ELECTRONICS	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

*2: IF THE RESULT OF SPOT TEST IS POSITIVE, CHROMIUM VI WOULD BE DETERMINED AS DETECTED.

TO BE CONTINUED

Annex 5: Analysis Result of Ni-plated Wafer (Page 5 of 7)



TEST REPORT

NUMBER: WUXH00002719

TESTS CONDUCTED

(I) TEST RESULT SUMMARY :

HALOGEN CONTENT :

TESTING ITEM	RESULT (ppm)
FLUORINE (F) CONTENT	ND
CHLORINE (Cl) CONTENT	ND
BROMINE (Br) CONTENT	ND
IODINE (I) CONTENT	ND

REMARKS : ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

DATE SAMPLE RECEIVE: AUG 02, 2010

TEST PERIOD: AUG 02, 2010 TO AUG 05, 2010

(II) TEST METHOD :

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
HALOGEN (F,Cl, Br,I) CONTENT	WITH REFERENCE TO IEC 61189-2:2006 BY COMBUSTION FLASK AND DETERMINED BY ION CHROMATOGRAPHY	50 ppm

REMARKS : REPORTING LIMIT = QUANTITATION LIMIT OF ANALYTE IN SAMPLE

TO BE CONTINUED

PAGE 5 OF 7

Intertek Testing Services Wuxi Ltd.

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Annex 5: Analysis Result of Ni-plated Wafer (Page 6 of 7)



TEST REPORT

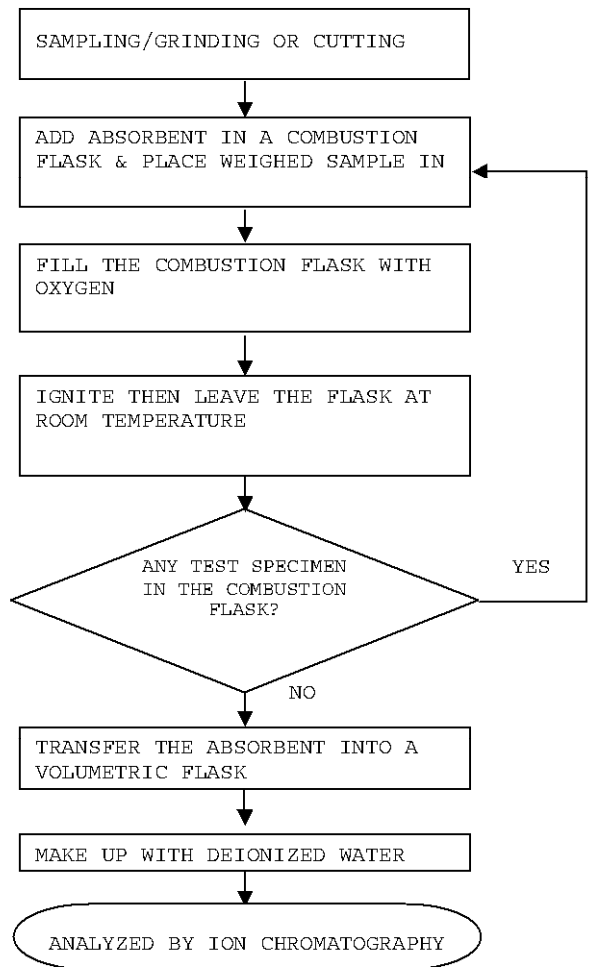
NUMBER: WUXH00002719

TESTS CONDUCTED

(III) MEASUREMENT FLOWCHART:

TEST FOR HALOGEN CONTENT

REFERENCE METHOD: IEC 61189-2 TEST 2C12



CHEMIST: FRED WANG/ ALLY WAN

TO BE CONTINUED

Annex 5: Analysis Result of Ni-plated Wafer (Page 7 of 7)

Intertek

TEST REPORT

NUMBER: WUXH00002719

TESTS CONDUCTED

PHOTO



END OF REPORT

PAGE 7 OF 7

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



TEST REPORT

NUMBER: WUXH00002721

APPLICANT: CONCORD SEMICONDUCTOR(WUXI) CO., LTD.
DATE: AUG 06, 2010
EAST 1#, ZHENFA 6 ROAD, SHUO FANG
INDUSTRIAL PARK WUXI NATIONAL HIGH-
TECH DEVELOPMENT ZONE,
WUXI, JIANGSU, CHINA
ATTN: ZHANG XIAOPENG

SAMPLE DESCRIPTION:

ONE (1) PIECE OF SUBMITTED SAMPLE SAID TO BE : **WHITE POWDER.**

ITEM NAME : WAFER PASSIVATION.

VENDOR : PROPRIETY.

COMPONENT OR PART NO. : PROPRIETY.

TEST ITEM : Pb, Cd, Hg, CrVI, PBB, PBDE, F, Cl, Br, I.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

TO BE CONTINUED

PREPARED AND CHECKED BY:
FOR INTERTEK TESTING SERVICES WUXI LTD.



JESSICA LU
GENERAL MANAGER

PAGE 1 OF 7

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Annex 6: Analysis Result of Passivation Glass (Page 2 of 7)



TEST REPORT

NUMBER: WUXH00002721

TESTS CONDUCTED

(A) TEST RESULT SUMMARY:

TESTING ITEM	RESULT
CADMIUM (Cd) CONTENT (mg/kg)	ND
LEAD (Pb) CONTENT (mg/kg)	207400
MERCURY (Hg) CONTENT (mg/kg)	ND
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (mg/kg) (FOR NON-METAL)	ND
POLYBROMINATED BIPHENYLS (PBBs) (mg/kg)	
MONOBROMO BIPHENYLS (MonoBB)	ND
DIBROMO BIPHENYLS (DiBB)	ND
TRIBROMO BIPHENYLS (TriBB)	ND
TETRABROMO BIPHENYLS (TetraBB)	ND
PENTABROMO BIPHENYLS (PentaBB)	ND
HEXABROMO BIPHENYLS (HexaBB)	ND
HEPTABROMO BIPHENYLS (HeptaBB)	ND
OCTABROMO BIPHENYLS (OctaBB)	ND
NONABROMO BIPHENYLS (NonaBB)	ND
DECABROMO BIPHENYL (DecaBB)	ND
POLYBROMINATED DIPHENYL ETHERS (PBDEs) (mg/kg)	
MONOBROMO DIPHENYL ETHERS (MonoBDE)	ND
DIBROMO DIPHENYL ETHERS (DiBDE)	ND
TRIBROMO DIPHENYL ETHERS (TriBDE)	ND
TETRABROMO DIPHENYL ETHERS (TetraBDE)	ND
PENTABROMO DIPHENYL ETHERS (PentaBDE)	ND
HEXABROMO DIPHENYL ETHERS (HexaBDE)	ND
HEPTABROMO DIPHENYL ETHERS (HeptaBDE)	ND
OCTABROMO DIPHENYL ETHERS (OctaBDE)	ND
NONABROMO DIPHENYL ETHERS (NonaBDE)	ND
DECABROMO DIPHENYL ETHER (DecaBDE)	ND

REMARK:

mg/kg = MILLIGRAM PER KILOGRAM BASED ON DRY WEIGHT= ppm

ND = NOT DETECTED

= THE RESULT IS FOR REFERENCE ONLY

TO BE CONTINUED

Annex 6: Analysis Result of Passivation Glass (Page 3 of 7)



TEST REPORT

NUMBER: WUXH00002721

TESTS CONDUCTED

(B) RoHS REQUIREMENT:

RESTRICTED SUBSTANCES	LIMITS
CADMIUM (Cd)	0.01% (100 mg/kg)
LEAD (Pb)	0.1% (1000 mg/kg)
MERCURY (Hg)	0.1% (1000 mg/kg)
CHROMIUM (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
POLYBROMINATED BIPHENYLS (PBBs)	0.1% (1000 mg/kg)
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	0.1% (1000 mg/kg)

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

(c) TEST METHOD:

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
CADMIUM (Cd) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
LEAD (Pb) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
MERCURY (Hg) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR NON-METAL)	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ALKALINE DIGESTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER	1 mg/kg
POLYBROMINATED BIPHENYLS (PBBs) & POLYBROMINATED DIPHENYL ETHERS (PBDEs)	WITH REFERENCE TO IEC IEC 62321 EDITION 1.0: 2008, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS AND FURTHER HPLC CONFIRMATION WHEN NECESSARY.	5 mg/kg

DATE SAMPLE RECEIVED:AUG 02, 2010

TESTING PERIOD:AUG 02, 2010 TO AUG 05, 2010

TO BE CONTINUED

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

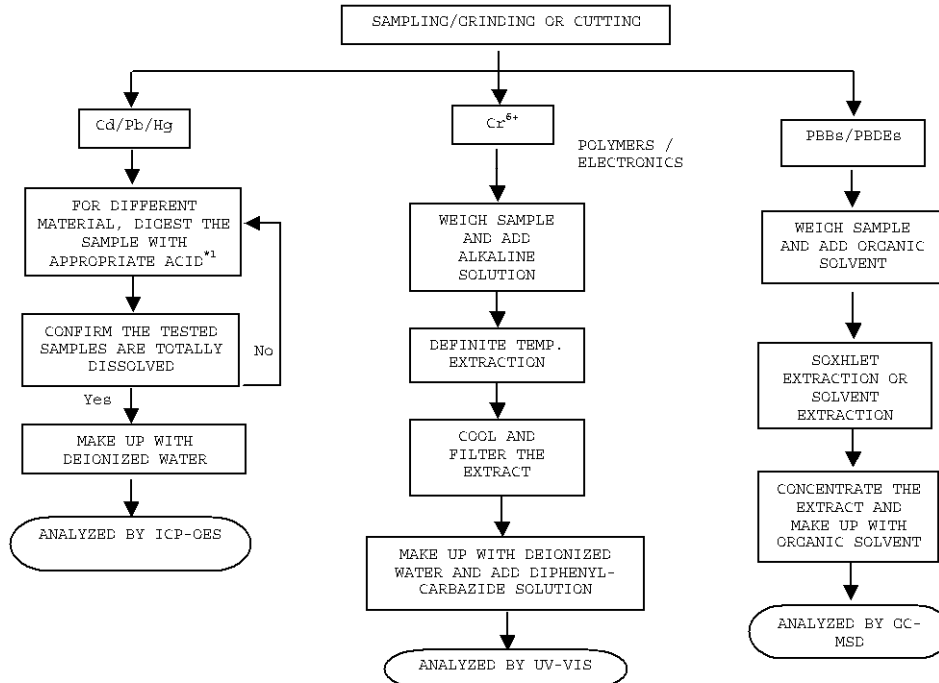


TEST REPORT

NUMBER: WUXH00002721

TESTS CONDUCTED

(D) MEASUREMENT FLOWCHART:
TEST FOR Cd/Pb/Hg/Cr (VI)/PBBs/PBDEs CONTENTS
REFERENCE STANDARD: IEC 62321 EDITION 1.0: 2008



CHEMIST: INORGANIC (ANN LUO/FRED WANG/ALLY WAN)
ORGANIC (JENNY XU/CHERRY SUN)

REMARKS:

*1: LIST OF APPROPRIATE ACID:

MATERIAL	ACID ADDED FOR DIGESTION
POLYMERS	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
METALS	HNO ₃ , HCl, HF
ELECTRONICS	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

*2: IF THE RESULT OF SPOT TEST IS POSITIVE, CHROMIUM VI WOULD BE DETERMINED AS DETECTED.

TO BE CONTINUED

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



TEST REPORT

NUMBER: WUXH00002721

TESTS CONDUCTED

(I) TEST RESULT SUMMARY :

HALOGEN CONTENT :

TESTING ITEM	RESULT (ppm)
FLUORINE (F) CONTENT	ND
CHLORINE (Cl) CONTENT	ND
BROMINE (Br) CONTENT	ND
IODINE (I) CONTENT	ND

REMARKS : ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

DATE SAMPLE RECEIVE: AUG 02, 2010

TEST PERIOD: AUG 02, 2010 TO AUG 05, 2010

(II) TEST METHOD :

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
HALOGEN (F, Cl, Br, I) CONTENT	WITH REFERENCE TO IEC 61189-2:2006 BY COMBUSTION FLASK AND DETERMINED BY ION CHROMATOGRAPHY	50 ppm

REMARKS : REPORTING LIMIT = QUANTITATION LIMIT OF ANALYTE IN SAMPLE

TO BE CONTINUED

PAGE 5 OF 7

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



TEST REPORT

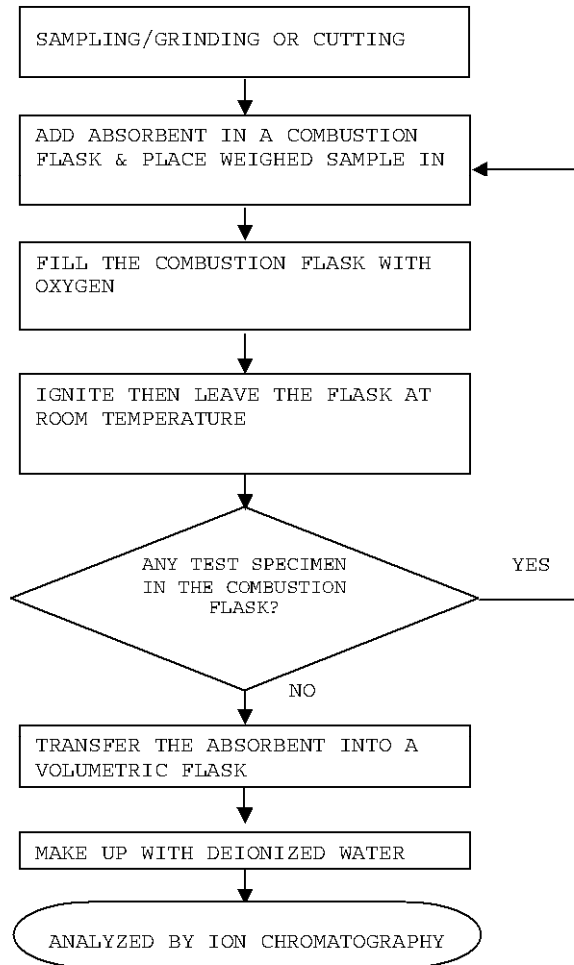
NUMBER: WUXH00002721

TESTS CONDUCTED

(III) MEASUREMENT FLOWCHART:

TEST FOR HALOGEN CONTENT

REFERENCE METHOD: IEC 61189-2 TEST 2C12



CHEMIST: FRED WANG/ ALLY WAN

TO BE CONTINUED

PAGE 6 OF 7

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

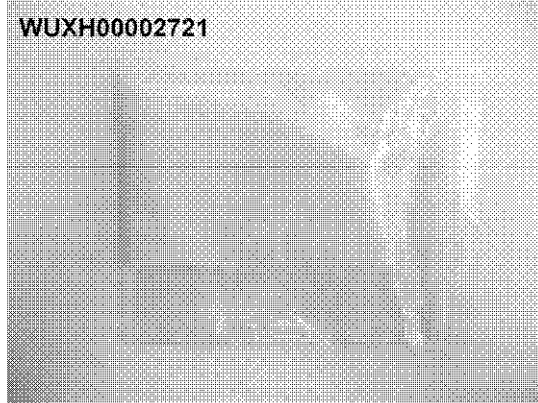


TEST REPORT

NUMBER: WUXH00002721

TESTS CONDUCTED

PHOTO



END OF REPORT

PAGE 7 OF 7

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



TEST REPORT

NUMBER: WUXH00002745

APPLICANT: CONCORD SEMICONDUCTOR(WUXI) CO., LTD.
DATE: AUG 06, 2010
EAST 1#, ZHENFA 6 ROAD, SHUO FANG
INDUSTRIAL PARK WUXI NATIONAL HIGH-
TECH DEVELOPMENT ZONE,
WUXI, JIANGSU, CHINA
ATTN: ZHANG XIAOPENG

SAMPLE DESCRIPTION:

ONE(1)PIECE OF SUBMITTED SAMPLE SAID TO BE :**GREY PASTE.**
ITEM NAME : SOLDER PASTER.
VENDOR : HERAEUS MATERIALS TECHNOLOGY SHANGHAI LTD.
COMPONENT OR PART NO. : F367SN10-90PB.
TEST ITEM : Pb, Cd, Hg, CrVI, PBB PBDE, F, Cl, Br, I.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

TO BE CONTINUED

PREPARED AND CHECKED BY:
FOR INTERTEK TESTING SERVICES WUXI LTD.



JESSICA LU
GENERAL MANAGER

PAGE 1 OF 7

Intertek Testing Services Wuxi Ltd.
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Annex 7: Analysis Result of Die Bonding Solder (Page 2 of 7)



TEST REPORT

NUMBER: WUXH00002745

TESTS CONDUCTED

(A) TEST RESULT SUMMARY:

TESTING ITEM	RESULT
CADMIUM (Cd) CONTENT (mg/kg)	ND
LEAD (Pb) CONTENT (mg/kg)	932600
MERCURY (Hg) CONTENT (mg/kg)	ND
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (mg/kg) (FOR NON-METAL)	ND
POLYBROMINATED BIPHENYLS (PBBs) (mg/kg)	
MONOBROMO BIPHENYLS (MonoBB)	ND
DIBROMO BIPHENYLS (DiBB)	ND
TRIBROMO BIPHENYLS (TriBB)	ND
TETRABROMO BIPHENYLS (TetraBB)	ND
PENTABROMO BIPHENYLS (PentaBB)	ND
HEXABROMO BIPHENYLS (HexaBB)	ND
HEPTABROMO BIPHENYLS (HeptaBB)	ND
OCTABROMO BIPHENYLS (OctaBB)	ND
NONABROMO BIPHENYLS (NonaBB)	ND
DECABROMO BIPHENYL (DecaBB)	ND
POLYBROMINATED DIPHENYL ETHERS (PBDEs) (mg/kg)	
MONOBROMO DIPHENYL ETHERS (MonoBDE)	ND
DIBROMO DIPHENYL ETHERS (DiBDE)	ND
TRIBROMO DIPHENYL ETHERS (TriBDE)	ND
TETRABROMO DIPHENYL ETHERS (TetraBDE)	ND
PENTABROMO DIPHENYL ETHERS (PentaBDE)	ND
HEXABROMO DIPHENYL ETHERS (HexaBDE)	ND
HEPTABROMO DIPHENYL ETHERS (HeptaBDE)	ND
OCTABROMO DIPHENYL ETHERS (OctaBDE)	ND
NONABROMO DIPHENYL ETHERS (NonaBDE)	ND
DECABROMO DIPHENYL ETHER (DecaBDE)	ND

REMARK:

mg/kg = MILLIGRAM PER KILOGRAM BASED ON DRY WEIGHT= ppm

ND = NOT DETECTED

= THE RESULT IS FOR REFERENCE ONLY

TO BE CONTINUED

Annex 7: Analysis Result of Die Bonding Solder (Page 3 of 7)



TEST REPORT

NUMBER: WUXH00002745

TESTS CONDUCTED

(B) RoHS REQUIREMENT:

RESTRICTED SUBSTANCES	LIMITS
CADMIUM (Cd)	0.01% (100 mg/kg)
LEAD (Pb)	0.1% (1000 mg/kg)
MERCURY (Hg)	0.1% (1000 mg/kg)
CHROMIUM (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
POLYBROMINATED BIPHENYLS (PBBs)	0.1% (1000 mg/kg)
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	0.1% (1000 mg/kg)

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

(c) TEST METHOD:

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
CADMIUM (Cd) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
LEAD (Pb) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
MERCURY (Hg) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 mg/kg
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR NON-METAL)	WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ALKALINE DIGESTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER	1 mg/kg
POLYBROMINATED BIPHENYLS (PBBs) & POLYBROMINATED DIPHENYL ETHERS (PBDEs)	WITH REFERENCE TO IEC IEC 62321 EDITION 1.0: 2008, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS AND FURTHER HPLC CONFIRMATION WHEN NECESSARY.	5 mg/kg

DATE SAMPLE RECEIVED:AUG 02, 2010
 TESTING PERIOD:AUG 02, 2010 TO AUG 05, 2010

TO BE CONTINUED

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

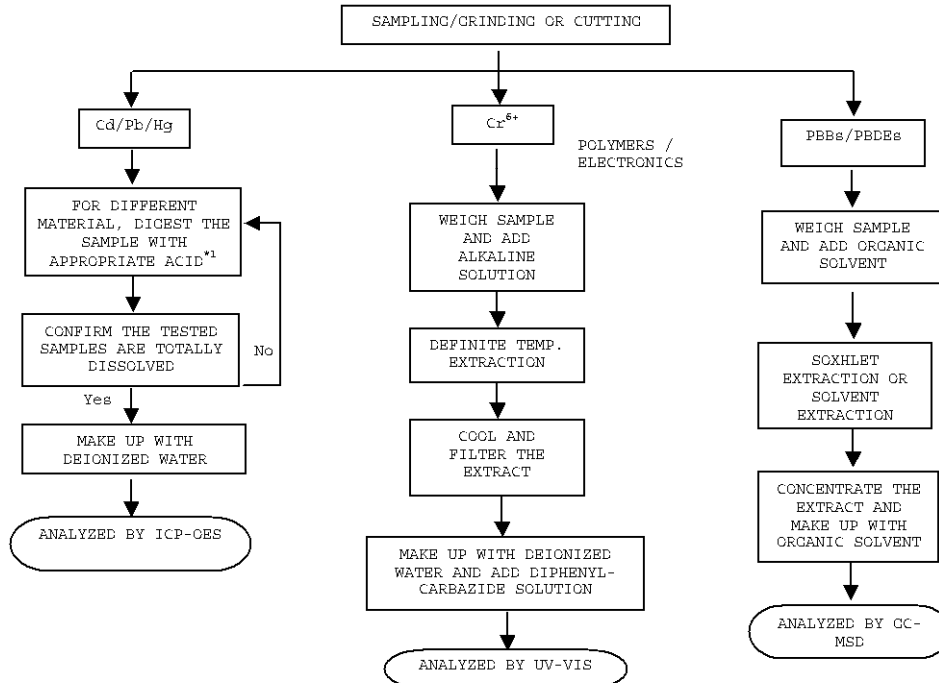


TEST REPORT

NUMBER: WUXH00002745

TESTS CONDUCTED

(D) MEASUREMENT FLOWCHART:
TEST FOR Cd/Pb/Hg/Cr (VI)/PBBs/PBDEs CONTENTS
REFERENCE STANDARD: IEC 62321 EDITION 1.0: 2008



CHEMIST: INORGANIC (ANN LUO/FRED WANG/ALLY WAN)
ORGANIC (JENNY XU/CHERRY SUN)

REMARKS:

*1: LIST OF APPROPRIATE ACID:

MATERIAL	ACID ADDED FOR DIGESTION
POLYMERS	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
METALS	HNO ₃ , HCl, HF
ELECTRONICS	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

*2: IF THE RESULT OF SPOT TEST IS POSITIVE, CHROMIUM VI WOULD BE DETERMINED AS DETECTED.

TO BE CONTINUED

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



TEST REPORT

NUMBER: WUXH00002745

TESTS CONDUCTED

(I) TEST RESULT SUMMARY :

HALOGEN CONTENT :

TESTING ITEM	RESULT (ppm)
FLUORINE (F) CONTENT	ND
CHLORINE (Cl) CONTENT	ND
BROMINE (Br) CONTENT	ND
IODINE (I) CONTENT	ND

REMARKS : ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

DATE SAMPLE RECEIVE: AUG 02, 2010

TEST PERIOD: AUG 02, 2010 TO AUG 05, 2010

(II) TEST METHOD :

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
HALOGEN (F,Cl, Br,I) CONTENT	WITH REFERENCE TO IEC 61189-2:2006 BY COMBUSTION FLASK AND DETERMINED BY ION CHROMATOGRAPHY	50 ppm

REMARKS : REPORTING LIMIT = QUANTITATION LIMIT OF ANALYTE IN SAMPLE

TO BE CONTINUED

PAGE 5 OF 7

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Annex 7: Analysis Result of Die Bonding Solder (Page 6 of 7)



TEST REPORT

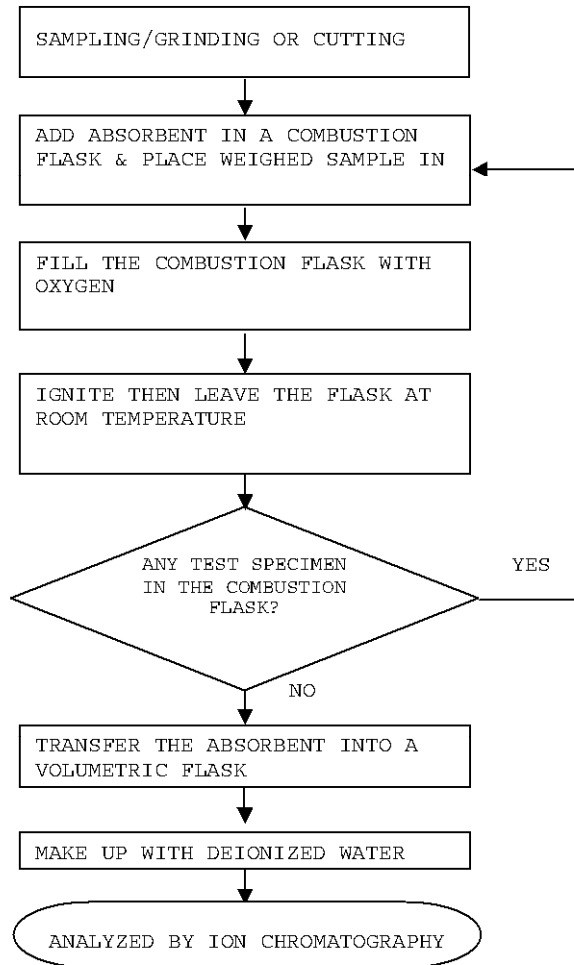
NUMBER: WUXH00002745

TESTS CONDUCTED

(III) MEASUREMENT FLOWCHART:

TEST FOR HALOGEN CONTENT

REFERENCE METHOD: IEC 61189-2 TEST 2C12



CHEMIST: FRED WANG/ ALLY WAN

TO BE CONTINUED

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

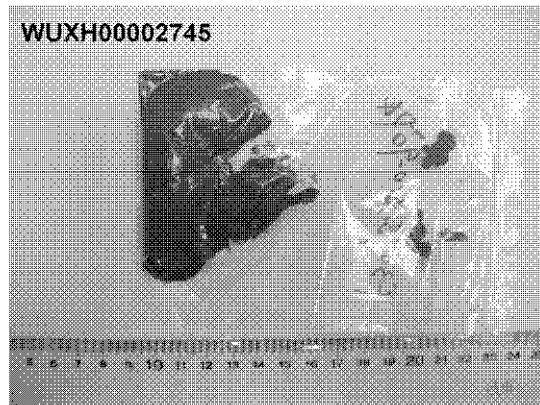


TEST REPORT

NUMBER: WUXH00002745

TESTS CONDUCTED

PHOTO



END OF REPORT

PAGE 7 OF 7

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Annex 8: Applicable RoHS exemptions (Page 1 of 1)

13.2.2003 EN Official Journal of the European Union L 37/19

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

13.2.2003 EN Official Journal of

Article 4

Prevention

1. Member States shall ensure that, from 1 July 2006, new electrical and electronic equipment put on the market does not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE). National measures restricting or prohibiting the use of these substances in electrical and electronic equipment which were adopted in line with Community legislation before the adoption of this Directive may be maintained until 1 July 2006.

to be protected and an overall strategy that in particular restricts the use of cadmium and stimulates research into substitutes should therefore be implemented. The Reso-

13.2.2003 EN Official Journal of the European Union L 37/23

2. Paragraph 1 shall not apply to the applications listed in the Annex.

ANNEX

Applications of lead, mercury, cadmium and hexavalent chromium, which are exempted from the requirements of Article 4(1)

1. Mercury in compact fluorescent lamps not exceeding 5 mg per lamp.
2. Mercury in straight fluorescent lamps for general purposes not exceeding:

— halophosphate	10 mg
— triphosphate with normal lifetime	5 mg
— triphosphate with long lifetime	8 mg.
3. Mercury in straight fluorescent lamps for special purposes.
4. Mercury in other lamps not specifically mentioned in this Annex.
5. Lead in glass of cathode ray tubes, electronic components and fluorescent tubes.
6. Lead as an alloying element in steel containing up to 0,35 % lead by weight, aluminium containing up to 0,4 % lead by weight and as a copper alloy containing up to 4 % lead by weight.
7. — Lead in high melting temperature type solders (i.e. tin-lead solder alloys containing more than 85 % lead),
 - lead in solders for servers, storage and storage array systems (exemption granted until 2010),
 - lead in solders for network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunication,
 - lead in electronic ceramic parts (e.g. piezoelectronic devices).
8. Cadmium plating except for applications banned under Directive 91/338/EEC ⁽¹⁾ amending Directive 76/769/EEC ⁽²⁾ relating to restrictions on the marketing and use of certain dangerous substances and preparations.