

Test Report No.: SCATR1107000882 Date: AUG 08, 2011 Page 1 of 11

LIAN JING METAL MATERIAL (HUI ZHOU)CO.,LTD HIGH-TECH ZONE, HUIZHOU ZHONG KAI CHEN JIANG VILLAGE INDUSTRIAL ZONE, CHENGHAI STREET

The following sample(s) was/were submitted and identified on behalf of the applicant as LEAD-FREE SOLDER **BAR**

SGS Job No. GZ1107098984/CHEM Tested sample information Style/Item No.:LJ9635B

Buyer YONG TAI ELECTRONICS(DONGGUAN)CO.,LTD ELECTRONIC

Manufacture LIAN JING METAL MATERIAL (HUI ZHOU)CO.,LTD LIAN JING METAL MATERIAL (HUI ZHOU)CO.,LTD Supplier

Date of Sample Received JUL 28, 2011

JUL 28, 2011 TO AUG 02, 2011 **Testing Period**

A: As requested by client, SVHC screening is performed according to: Test Requested:

> Fifty three (53) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jun 20, 2011 regarding Regulation (EC) No 1907/2006 concerning the REACH.

B~C: Selected test (s) as requested by client.

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

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

Summary:

A: According to the specified scope and analytical techniques, concentrations of tested SVHC are ≤ 0.1% (w/w) in selected **PASS** parts of the submitted sample.

Conclusion: B: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Co., Ltd.

Tolde

Bob Chen

Technical Support Manager

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GZAT

s Co., Ltd. | 198 Kezhu Road, Scientech Park Guangzhou Economic& Technology Development Distrot, Guangzhou, China 510663 t (86–20) 82155555 f (86–20) 82075198



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Test Sample:

Sample Description:

Specimen No. **Description** No.1 Silvery metal bar

A: SVHC

Remark:

- (1) The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA: http://echa.europa.eu/chem data/authorisation process/candidate list table en.asp These lists are under evaluation by ECHA and may subject to change in the future.
- (2) In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).
- (3) Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.
- (4) If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Method:

SGS In-House method-GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, GC-MS, Colorimetric method/HPLC and UV-VIS.

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Test Result: (Substances in the Candidate List of SVHC)

Substance Name	040 No	EQ.N.	Concentration(%)) RL(%)	
Substance Name	CAS No.	EC No.	No.1		
1,2,3-trichloropropane	96-18-4	202-486-1	N.D.	0.050	
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	276-158-1	N.D.	0.050	
1,2-Benzenedicarboxylic acid, di-C7-11- branched and linear alkyl esters	68515-42-4	271-084-6	N.D.	0.050	
1-Methyl-2-pyrrolidone	872-50-4	212-828-1	N.D.	0.050	
2,4-Dinitrotoluene	121-14-2	204-450-0	N.D.	0.050	
2-Ethoxyethanol	110-80-5	203-804-1	N.D.	0.050	
2-Ethoxyethyl acetate	111-15-9	203-839-2	N.D.	0.050	
2-Methoxyethanol	109-86-4	203-713-7	N.D.	0.050	
4,4'-Diaminodiphenylmethane(MDA)	101-77-9	202-974-4	N.D.	0.050	
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	201-329-4	N.D.	0.050	
Acrylamide	79-06-01	201-173-7	N.D.	0.050	
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	287-476-5	N.D.	0.050	
Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	-	N.D.	0.005	
Ammonium dichromate*	7789-09-5	232-143-1	N.D.	0.005	
Anthracene	120-12-7	204-371-1	N.D.	0.050	
Anthracene oil*	90640-80-5	292-602-7	N.D.	0.050	
Anthracene oil, anthracene paste*	90640-81-6	292-603-2	N.D.	0.050	
Anthracene oil, anthracene paste, anthracene fraction*	91995-15-2	295-275-9	N.D.	0.050	
Anthracene oil, anthracene paste, distn. Lights*	91995-17-4	295-278-5	N.D.	0.050	
Anthracene oil, anthracene-low*	90640-82-7	292-604-8	N.D.	0.050	
Benzyl butyl phthalate (BBP)	85-68-7	201-622-7	N.D.	0.050	
Bis(2-ethylhexyl)phthalate (DEHP)	117-81-7	204-211-0	N.D.	0.050	
Bis(tributyltin)oxide (TBTO)	56-35-9	200-268-0	N.D.	0.050	
Boric acid*	10043-35-3 11113-50-1	233-139-2 234-343-4	N.D.	0.005	
Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5 - 13530-68-2	231-801-5 - 236-881-5	N.D.	0.005	
Chromium trioxide*	1333-82-0	215-607-8	N.D.	0.005	

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Substance Name	CAS No.	EC No.	Concentration(%)	RL(%)
Substance Name	OAS 110.	LC NO.	No.1	
Cobalt dichloride*	7646-79-9	231-589-4	N.D.	0.005
Cobalt(II) carbonate*	513-79-1	208-169-4	N.D.	0.005
Cobalt(II) diacetate*	71-48-7	200-755-8	N.D.	0.005
Cobalt(II) dinitrate*	10141-05-6	233-402-1	N.D.	0.005
Cobalt(II) sulphate*	10124-43-3	233-334-2	N.D.	0.005
Diarsenic pentaoxide*	1303-28-2	215-116-9	N.D.	0.005
Diarsenic trioxide*	1327-53-3	215-481-4	N.D.	0.005
Dibutyl phthalate (DBP)	84-74-2	201-557-4	N.D.	0.050
Diisobutyl phthalate	84-69-5	201-553-2	N.D.	0.050
Disodium tetraborate, anhydrous*	1303-96-4 1330-43-4 12179-04-3	215-540-4	N.D.	0.005
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) Δ	25637-99-4 and 3194- 55-6	247-148-4 and 221-695-9	N.D.	0.050
Hydrazine	7803-57-8 302-01-2	206-114-9	N.D.	0.050
Lead chromate*	7758-97-6	231-846-0	N.D.	0.005
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	235-759-9	N.D.	0.005
Lead hydrogen arsenate*	7784-40-9	232-064-2	N.D.	0.005
Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	215-693-7	N.D.	0.005
Pitch, coal tar, high temp.*	65996-93-2	266-028-2	N.D.	0.050
Potassium chromate*	7789-00-6	232-140-5	N.D.	0.005
Potassium dichromate*	7778-50-9	231-906-6	N.D.	0.005
Sodium chromate*	7775-11-3	231-889-5	N.D.	0.005
Sodium dichromate*	7789-12-0 and 10588-01-9	234-190-3	N.D.	0.005
Strontium chromate*	7789-06-2	232-142-6	N.D.	0.005
Tetraboron disodium heptaoxide, hydrate*	12267-73-1	235-541-3	N.D.	0.005
Trichloroethylene	79-01-6	201-167-4	N.D.	0.050
Triethyl arsenate*	15606-95-8	427-700-2	N.D.	0.005
Tris(2-chloroethyl)phosphate	115-96-8	204-118-5	N.D.	0.050
Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	-	N.D.	0.005

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Notes:

- RL = Reporting Limit. All RL are based on homogenous material. (1). N.D. = Not detected (lower than RL), N.D. is denoted on the target compound.
- (2).^Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8.
- (3).* The test result is based on the calculation of selected element(s) / marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website: www.reach.sgs.com/substance-of-very-high-concern-analysis-information-page.htm

Calculated concentration of boric acid, disodium tetraborate, anhydrous and tetraboron disodium heptaoxide, hydrate are based on the water extractive boron and sodium by ICP-OES.

RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, sodium, chromium, chromium (VI), silicon, aluminum, zirconium, boron, potassium and strontium respectively), except molybdenum RL=0.0005%

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B: RoHS Directive 2011/65/EU

Test Item(s) Cadmium (Cd) Lead (Pb) Mercury (Hg) Hexavalent Chromium (CrVI) by boiling water extraction	Unit mg/kg mg/kg mg/kg -	Test Method (Reference) IEC 62321: 2008, ICP-OES IEC 62321: 2008, ICP-OES IEC 62321: 2008, ICP-OES IEC 62321: 2008, UV-Vis	Result N.D. 53 N.D. Negative	MDL 2 2 2 ♦	Limit 100 1000 1000 #
Sum of PBBs	mg/kg	-	N.D.	-	1000
Monobromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Dibromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tribromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tetrabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Pentabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Hexabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Heptabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Octabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Nonabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Decabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Sum of PBDEs	mg/kg	-	N.D.	-	1000
Monobromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Dibromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tribromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tetrabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Pentabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Hexabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Heptabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Octabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Nonabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Decabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	

Note:

- 1. mg/kg = ppm
- 2. N.D. = Not Detected (< MDL)
- 3. MDL = Method Detection Limit
- 4. \diamondsuit = Spot test:

Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;

(The tested sample should be further verified by boiling water extraction method if the spot test result is negative

or cannot be confirmed.)

Boiling water extraction:

Negative = Absence of CrVI coating

Positive = Presence of CrVI coating; the detected concentration in boiling water extraction solution is equal

or

greater than 0.02 mg/kg with 50cm² sample surface area.

Storage conditions and production date of the tested sample are unavailable and thus results of Cr(VI) represent

status of the sample at the time of testing.

5. # = Positive indicates the presence of CrVI on the tested area.

Negative indicates the absence of CrVI on the tested area.

6. "-" = Not regulated

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C: Halogen

Test Item(s)	Unit	Test Method (Reference)	No.1	MDL
Fluorine (F)	mg/kg	BS EN 14582:2007, IC	N.D.	50
Chlorine (CI)	mg/kg	BS EN 14582:2007, IC	N.D.	50
Bromine (Br)	mg/kg	BS EN 14582:2007, IC	N.D.	50
lodine (I)	mg/kg	BS EN 14582:2007, IC	N.D.	50

Note:

- 1. mg/kg = ppm
- 2. N.D. = Not Detected (< MDL) 3. MDL = Method Detection Limit

Remark: the results & photo(s) of this report refer to the test report SCATR1107000877.

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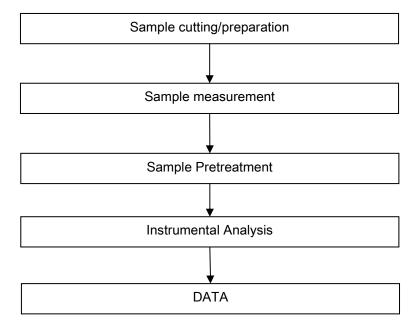


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ATTACHMENTS

SVHC Testing Flow Chart

- 1) Name of the person who made testing: Bella Wang / Tina Zhao
- 2) Name of the person in charge of testing: Adams Yu / Ryan Yang



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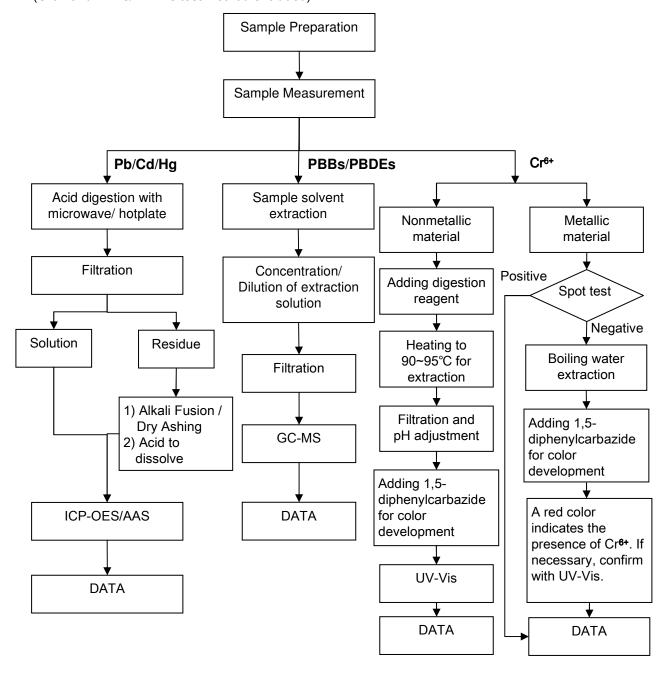


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ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bella Wang / Cutey Yu / Ross Zhan
- 2) Name of the person in charge of testing: Adams Yu / Ryan Yang
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr6+ and PBBs/PBDEs test method excluded).



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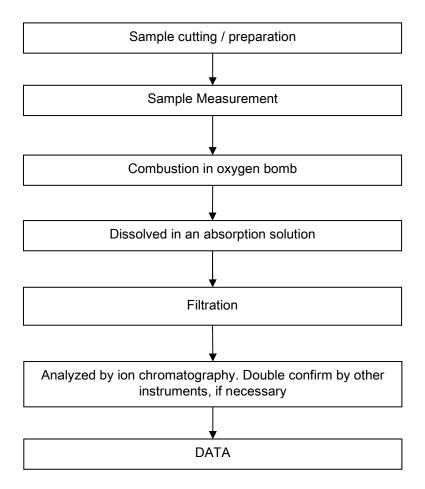
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ATTACHMENTS

Halogen Testing Flow Chart

1) Name of the person who made testing: Liang Wang

2) Name of the person in charge of testing: Michelle Song



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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

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