

Certificate of non-use of The Controlled Substances

Company name Littelfuse, Inc

Product Covered Thyristor SOT-223 Package

Issue Date June 27, 2011

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 _____

< Koichiro Yoshimoto, Senior Product Engineer, Littelfuse, Inc.>

(1) Parts, sub-materials and unit parts

This document covers Thyristor SOT-223 Package, supplied by Littelfuse, LP. Please see page 2 for the list of products covered.

< Materials used >

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

(2) The analysis result on all measurable substances

Please see annex 1 through 8 attached to this document.

Remarks :

1. Pb (lead) contained in die attach (item 3) and passivation glass in wafer (item 6) are categorized as exempt in RoHS Annex 5 & 7.

Please refer to Annex 7 of this report for the extract of the applicable exemptions of RoHS (EU Directive 2002/95/EC)

Table 1: Littelfuse Part Number covered by this report

| Standard (Catalog) Part Number | | | SPECIAL DEVICE P/N |
|--------------------------------|------------|-----------|---|
| L0103DTRP | L0109DTRP | S4X8TSRP | Any Special P/N which has base standard P/N listed in this table. |
| L0103DTRP4 | L0109DTRP4 | S4X8TS1RP | |
| L0103MTRP | L0109MTRP | S4X8TS2RP | |
| L0103MTRP4 | L0109MTRP4 | S402TSRP | S940S6X8TSRP |
| L0103NTRP | L0109NTRP | S6X8TSRP | |
| L0103NTRP4 | L0109NTRP4 | S6X8TS1RP | |
| L0107DTRP | | S6X8TS2RP | |
| L0107DTRP4 | LX803DTRP | S602TSRP | |
| L0107MTRP | LX803MTRP | S8X8TSRP | |
| L0107MTRP4 | LX807DTRP | S8X8TS1RP | |
| L0107NTRP | LX807MTRP | S8X8TS2RP | |
| L0107NTRP4 | | | |
| | | | |
| | | | |
| | | | |

Table 2: Homogeneous Material Used

| # | Description | Name of Material | Type | Analysis data |
|---|------------------|------------------|---------|--|
| 1 | Lead finish | Matte-Tin | metal | annex 1 |
| 2 | Molding compound | Epoxy resin | plastic | annex 2 |
| 3 | Die attach | solder | metal | annex 3 Pb for this solder application is exempted by RoHS Annex 7. Please refer to Annex 7 of this report for the RoHS exemption. |
| 4 | Die bonding wire | Gold | metal | annex 4 |
| 5 | Lead frame | copper alloy | metal | annex 5 |
| 6 | Silicon die | silicon | metal | annex 6 Pb in the report is from passivation glass and is exempted by RoHS Annex 5. Please refer to Annex 7 of this report for the RoHS exemption. |
| | | aluminum | metal | |
| | | glass | glass | |

Table 3: RoHS-regulated substance in raw materials

| Components | Analysis Result | | | | | | |
|---|-----------------|----------------|---------------|--|---------|---------|------------------|
| | Cd Cadmium | Cr Chromium | Hg Mercury | Pb Lead | PBB | PBDE | TOTAL HALOGEN |
| As Component Total (Typical Values) | < 2ppm | < 2ppm | < 2ppm | <2 ppm* ¹ (0.3% ²) | < 5 ppm | < 5 ppm | < 112 ppm |
| Outside lead finish (Matte-Tin plating) See Annex 1 for the detail. | < 2ppm | < 2ppm | < 2ppm | 49ppm | < 5ppm | < 5ppm | --- |
| Epoxy Resin compound (mixture of resin, filler and fire retardant) See Annex 2 for the detail. | < 2ppm | < 2ppm | < 2ppm | < 2ppm | < 5ppm | < 5ppm | 112ppm |
| Die Attach Solder (Solder) See Annex 3 for the detail. | < 2ppm | < 2ppm | < 2ppm | 95% ³ | < 5ppm | < 5ppm | < 50ppm |
| Die-bonding Wire (Gold wire) See Annex 4 for the detail. | < 2ppm | < 2ppm | < 2ppm | < 2ppm | < 5ppm | < 5ppm | < 50ppm |
| Lead frame (Copper Alloy C194) See Annex 5 for the detail. | < 2ppm | < 2ppm | < 2ppm | 16ppm | < 5ppm | < 5ppm | --- |
| Silicon Die (Silicon + Metal electrode + passivation) See Annex 6 for the detail. | < 2ppm | < 2ppm | < 2ppm | 1.9 % ³ | < 5ppm | < 5ppm | < 50ppm |

*1 Less than 2 ppm Pb content overall, excluding Pb from the wafer passivation glass on silicon die.

*2 Up to 0.4% of Pb (lead) content overall, including the RoHS-exempted use of Pb

*3 Pb (lead) contained in die-attach solder and passivation glass are exempted from restriction by RoHS Annex 5 & 7.

Please refer to Annex 7 of this report for the applicable exemptions of RoHS (EU Directive 2002/95/EC)

Annex 1: Analysis Result of Outside Lead Plating Material (Page 1 of 5)



Test Report

No. LPCI00919/11
CTS Ref. CTS/11/0153/Success-Crown

Date: 18/01/2011

Page: 1 of 5

CROWN EMPEROR LTD
ROOM 2101, HONG KONG TRADE CENTRE
161-7 DES VOEUX ROAD CENTRAL, HONG KONG

The following merchandise was (were) submitted and identified by the client as:

Sample Description : SNTITE-24, 99.95% PURE TIN ANODE
Sample Receiving Date : 12/01/2011
Testing Period : 12/01/2011 to 16/01/2011

Test Requested : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.
Test Method : Please refer to next page(s).
Test Results : Please refer to next page(s).
Analysts : Ng Mei Kheng & Loi Woan Yee

SGS LABORATORY SERVICES (M) SDN. BHD.



CHONG KIEN LEN
B.Sc. (HONS) AMIC
LAB MANAGER

This document is issued by the Company in accordance to its General Conditions of Service (www.sgslab.com) and Terms and Conditions for Electronic Document (www.sgslab.com). Attention is drawn to the limitations of liability, indemnification and intellectual property as outlined therein. Once it printed the electronic document is to be treated as an original to the effect of UCP 600 Article 20D. The entire company's document may be held on www.sgslab.com. Any loss or theft of document is subject to the distribution control system before the Company's change of the file or its transfer. Only valid within the limits of its jurisdiction. The Company does not accept any liability to the client for the document's accuracy or reliability, nor exercising any right or obligation under the applicable document. This is applicable to the results shown in this report refer only to the sample(s) tested and such sample(s) are retained for three months only.

SGS Laboratory Services (M) Sdn. Bhd. No 28 Jalan Anggerik Vanilla 31.99 Kota Kemuning 40460 Selangor Darul Ehsan, Malaysia
(Company No. 63972-M) t +6 (03) 5121 2320 f +6 (03) 5121 9082 www.sgslab.com

Member of the SGS Group (SGS SA)

Annex 1: Analysis Result of Outside Lead Plating Material (Page 2 of 5)



Test Report

No. LPCI00919/11
CTS Ref. CTS/11/0152/Success-Crown

Date: 18/01/2011

Page: 2 of 5

Test results:

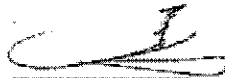
Test Part Description :

Sample Description : SNTITE-24, 99.99% PURE TIN ANODE

RoHS Directive 2002/95/EC

| Test Item(s): | Unit | Test Method | Results | MDL |
|----------------------------|-------|---|---------|-----|
| Cadmium(Cd) | mg/kg | With reference to EPA Method 3051A, and performed by ICP-OES | N.D. | 2 |
| Lead (Pb) | mg/kg | With reference to EPA Method 3051A, and performed by ICP-OES | 49 | 2 |
| Mercury (Hg) | mg/kg | With reference to EPA Method 3051A, and performed by ICP-OES | N.D. | 2 |
| Hexavalent Chromium (CrVI) | mg/kg | With reference to EPA Method 3060A & 7196A, and performed by UV-VIS Spectrophotometry | N.D. | 2 |
| Sum of PBBs | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS | N.D. | - |
| Monobromobiphenyl | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS | N.D. | 5 |
| Dibromobiphenyl | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS | N.D. | 5 |
| Tribromobiphenyl | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS | N.D. | 5 |
| Tetrabromobiphenyl | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS | N.D. | 5 |
| Hexabromobiphenyl | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS | N.D. | 5 |
| Pentabromobiphenyl | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS | N.D. | 5 |
| Heptabromobiphenyl | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS | N.D. | 5 |
| Octabromobiphenyl | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS | N.D. | 5 |
| Nonabromobiphenyl | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS | N.D. | 5 |
| Decabromobiphenyl | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS | N.D. | 5 |

SGS LABORATORY SERVICES (M) SDN. BHD.



CHONG KIEN LEN
B.Sc.(HONS) AMIC
LAB MANAGER

This document is issued by the Company in strict accordance with the General Conditions of Sale (www.sgs.com) and Terms and Conditions for Electronic Document (www.sgs.com). It should be read in conjunction with the General Conditions of Sale (www.sgs.com) and Terms and Conditions for Electronic Document (www.sgs.com). The data in this document is for information only and should not be used for any other purpose. Any data in this document is subject to change without notice. The Company's liability is limited to the amount of the fee charged for the analysis and will not extend to any other loss or damage. The Company is not responsible for any loss or damage to the sample or to any other party's property. The results shown in this report are only for the sample(s) tested and each sample(s) are retained for three months only.

SGS Laboratory Services (M) Sdn. Bhd. No 26 Jalan Anggerik Vanilla 31.99 Kota Kemuning 40460 Selangor Darul Ehsan, Malaysia
(Company No. 63972-M) t +6 (03) 5121 2320 f +6 (03) 5121 9082 www.sgs.com

Member of the SGS Group (SGS SA)

Annex 1: Analysis Result of Outside Lead Plating Material (Page 3 of 5)



Test Report

No. LPCI00919/11

Date: 18/01/2011

Page: 3 of 5

CTS Ref. CTS/11/0153/Success-Crown

| Test Item(s): | Unit | Test Method | Results | MDL |
|----------------------------|-------|---|---------|-----|
| Sum of PBDEs | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS. | N.D. | - |
| Monobromodiphenyl ether | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS. | N.D. | 5 |
| Dibromodiphenyl ether | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS. | N.D. | 5 |
| Tribromodiphenyl ether | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS. | N.D. | 5 |
| Tetrabromodiphenyl ether | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS. | N.D. | 5 |
| Pentabromodiphenyl ether | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS. | N.D. | 5 |
| Hexabromodiphenyl ether | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS. | N.D. | 5 |
| Heptabromodiphenyl ether | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS. | N.D. | 5 |
| Octabromodiphenyl ether | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS. | N.D. | 5 |
| Nonabromodiphenyl ether | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS. | N.D. | 5 |
| Decabromodiphenyl ether ## | mg/kg | With reference to EPA Method 3540C/3550C, and performed by GC-MS. | N.D. | 5 |

Note : (a) mg/kg = ppm ; (0.1 wt% = 1000ppm)

(b) N.D. = Not Detected

(c) MDL = Method Detection Limit

(d) ## = The exemption of DecaBDE in polymeric application according 2005/717/EC was overruled by the European Court of Justice by its decision of 01.04.2008. Subsequently DecaBDE is included in the sum of PBDE after 01.07.2008

(e) - = Not regulated

SGS LABORATORY SERVICES (M) SDN. BHD.



CHONG KIEN LEN
B.Sc.(HONS) AMIC
LAB MANAGER


This document is issued by the Company in respect to the General Conditions of Service (www.sgs.com/eng/conditions_of_service.html) and Terms and Conditions for Electronic Document (www.sgs.com/eng/e-document.html). Attention is drawn to the limitation of liability, indemnification and intellectual property as set forth in the latter. This is printed on electronic documents to be treated as an original with the meaning of UN/ECE Model Law on Electronic Commerce (M-Model Law) and may be subject to legal proceedings. Any loss or damage caused by the use of the Company's products or the use of the services provided with the limitation of liability, may be subject to legal proceedings. The Company's products and services are provided to the customer on an "as is" basis, without any warranty, express or implied, and the customer acknowledges and agrees to a maximum non-exceeding liability under the applicable document. This is obtainable at the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for three months only.

SGS Laboratory Services (M) Sdn. Bhd.
(Company No. 63972-M)

No 28 Jalan Anggerik Vanilla 31/99 Kota Kemuning 40460 Selangor Darul Ehsan, Malaysia
t +6 (03) 5121 2320 f +6 (03) 5121 9082 www.sgs.com

Member of the SGS Group (SGS SA)

Annex 1: Analysis Result of Outside Lead Plating Material (Page 4 of 5)



Test Report

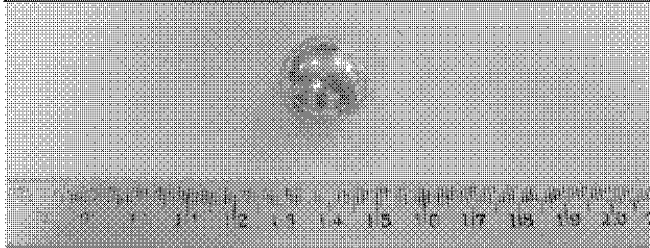
No. LPCI/00919/11 Date: 18/01/2011
CTS Ref. CTS/11/0153/Success-Crown

Page: 4 of 5


Test Part Description :

Sample Description : SNTITE-24, 99.95% PURE TIN ANODE

CROWN EMPEROR LTD
LPCI/00919/11



SGS LABORATORY SERVICES (M) SDN. BHD.




CHONG KIEN LEN
B.Sc.(HONS) AMIC
LAB MANAGER

This document is issued by the Company in strict accordance with the General Conditions of Service (www.sgslab.com) and Terms and Conditions for Electronic Document (www.sgslab.com). Attention is drawn to the limitations of liability, indemnification and intellectual property as set forth therein. This is printed on electronic documents to be treated as an original with the meaning of UCP 600 article 20D. The actual copy of this document may be held at the address www.sgslab.com. Any loss of this document is subject to the distribution control system before the Company's change of the file or file transfer only and within the limits of its hardware, policy. The Company will not be liable to the client to add the documents to the electronic copies to a transaction, non-executing and/or legal and obligations under the applicable documents. This is obtainable stated the results shown in this report refer only to the sample(s) tested and such sample(s) are retained for three months only.

SGS Laboratory Services (M) Sdn. Bhd. No 26 Jalan Anggerik Vanilla 31.93 Kota Kemuning 40460 Selangor Darul Ehsan, Malaysia
(Company No. 63972-M) t +6 (03) 5121 2320 f +6 (03) 5121 9082 www.sgslab.com

Member of the SGS Group (SGS SA)

Annex 1: Analysis Result of Outside Lead Plating Material (Page 5 of 5)



Test Report

No. LPCI/00919/11
CTS Ref. CTS/11/0153/Success-Crown

Date: 18/01/2011
Page: 5 of 5

1. DETERMINATION OF HEXAVALENT CHROMIUM BY METHOD US EPA 3060A/7196A

Sample Preparation
↓
Add colour-developing reagent
↓
Acidify with H₂SO₄
↓
Let stand for 5-10 min
↓
Analyses by UV-Spectrophotometer (540 nm)

2. MICROWAVE ASSISTED ACID DIGESTION OF ORGANICALLY BASED METRICES (US EPA 3051A)

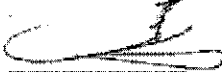
Cut sample in small pieces
↓
Weigh sample (0.2-0.5g) into digestion vessel
↓
Acid digestion (HNO₃) - Microwave
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP

3. DETERMINATION OF PBB/PBDE WITH GC-MS

Cut sample in small pieces
↓
Weigh sample (0.5-4g) into extraction thimble
↓
Ultrasonic / Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

**** End of Report ****

SGS LABORATORY SERVICES (M) SDN. BHD.



CHONG KIEN LEN
B.Sc. (HONS) AMIC
LAB MANAGER

This document is issued by the Company in accordance to the General Conditions of Service (www.sgs.com) and Terms and Conditions for Electronic Document (www.sgs.com). Attention is drawn to the fact that the information and analytical results are subject to the following conditions: (a) if printed the electronic document is to be treated as an original with the meaning of UCP 600 article 20D. The entire responsibility is assumed by the client or the issuer of the document. Any loss or damage to the document is subject to the conditions contained herein before the Company's charge of the file or the results only and within the limits of its liability. The Company shall not be responsible for the loss or damage to the documents or electronic files or data, from external or internal causes, under the applicable laws. This is applicable to the results shown in this report only for the sample(s) tested and such sample(s) are retained for three months only.

SGS Laboratory Services (M) Sdn. Bhd.
(Company No. 63972-M)

No 28 Jalan Anggerik Vanilla 31.99 Kota Kemuning 40460 Selangor Darul Ehsan, Malaysia
t +6 (03) 5121 2320 f +6 (03) 5121 9082 www.sgs.com

Member of the SGS Group (SGS SA)

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



Test Report

No. CANEC1100147901

Date: 17 Jan 2011

Page 1 of 7

HENKEL HUAWEI ELECTRONICS CO.,LTD.
SONGTIAO INDUSTRIAL PARK,LIANYUNGANG,JIANGSU,CHINA

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

Epoxy Moulding Compounds

SGS Job No. : 12938105 - SZ
Tested Sample Information : GR640A-S
Date of Sample Received : 13 Jan 2011
Testing Period : 13 Jan 2011 - 17 Jan 2011
Test Requested : Selected test(s) as requested by client.
Test Method : Please refer to next page(s).
Test Results : Please refer to next page(s).
Conclusion : A:Based on the performed tests on submitted sample(s), the results **comply with the RoHS Directive 2002/95/EC and its subsequent amendments.**

Signed for and on behalf of
SGS-CSTC Ltd.



Annie Liang
Approved Signatory

This document is issued by the Company subject to its General Conditions of Sale which are available on request at www.sgs.com, or by e-mail to sgs@sgs.com. The Company makes no warranty, express or implied, for the use of this document for purposes other than those intended. The Company is not responsible for the accuracy of the information contained herein and does not accept any liability for any loss or damage caused by the use of this document. The Company is not responsible for the accuracy of the information contained herein and does not accept any liability for any loss or damage caused by the use of this document. The Company is not responsible for the accuracy of the information contained herein and does not accept any liability for any loss or damage caused by the use of this document.



SGS-CSTC Ltd. (Shanghai) Branch, 12th Floor, No. 1288 Zhongyuan Road, Pudong District, Shanghai 201206, China
電話: 86-21-5890 1111 傳真: 86-21-5890 1112 郵政信箱: 800000

Member of the SGS Group (SGS SA)

Annex 2: Analysis Result of Molding Compound (Page 3 of 7)



Test Report

No. CANEC1100147901

Date: 17 Jan 2011

Page 3 of 7

B:Elementary Analysis

| Test Item(s) | Unit | Test Method (Reference) | Result | MDL |
|---------------|-------|-------------------------|--------|-----|
| Antimony (Sb) | mg/kg | EPA 3052:1996, ICP-OES | N.D. | 10 |

Note:

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

C:Halogen

| Test Item(s) | Unit | Test Method (Reference) | Result | MDL |
|---------------|-------|-------------------------|--------|-----|
| Fluorine (F) | mg/kg | BS EN 14582:2007, IC | N.D. | 50 |
| Chlorine (Cl) | mg/kg | BS EN 14582:2007, IC | 112 | 50 |
| Bromine (Br) | mg/kg | BS EN 14582:2007, IC | N.D. | 50 |
| Iodine (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

This document is issued by the Singapore branch of the Swiss Confederation's SGS Group, a global leader in inspection, testing and certification services. It is subject to the laws and regulations of the Swiss Confederation and the laws and regulations of the State of Singapore. The results of this document are intended for the use of the client and are not to be used for any other purpose. The client is responsible for the accuracy of the data provided and for the interpretation of the results. The client is also responsible for the accuracy of the data provided and for the interpretation of the results. The client is also responsible for the accuracy of the data provided and for the interpretation of the results.



SGS (Singapore) Pte. Ltd. 1100147901 | Tel: (65) 6349 2222 | Fax: (65) 6349 2222 | Email: sgsgroup@sgs.com
 中興一街·新加坡坡底區·新加坡坡底區 | 電話: 6349 2222 | 傳真: 6349 2222 | 電子郵件: sgsgroup@sgs.com

Member of the SGS Group (SGL SA)

Annex 2: Analysis Result of Molding Compound (Page 4 of 7)



Test Report

No. CANEC1100147901

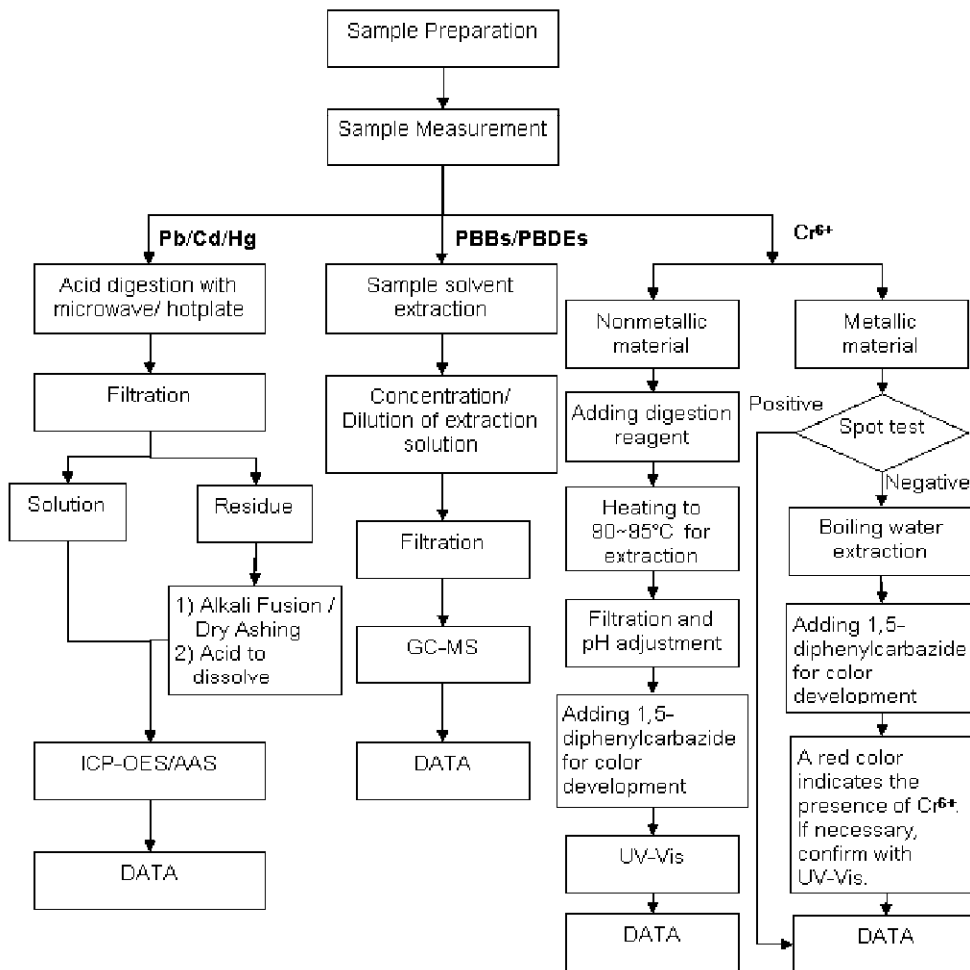
Date: 17 Jan 2011

Page 4 of 7

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).



This document is issued by SGS Group, a Swiss company, to its clients. It is a confidential document and its content is not to be disclosed to any third party without the prior written approval of SGS Group. The client is responsible for the accuracy of the information provided. The client is also responsible for the accuracy of the information provided. The client is also responsible for the accuracy of the information provided. The client is also responsible for the accuracy of the information provided.



SGS Group, a Swiss company, is a member of the SGS Group (SGS SA).
 瑞士精工集團有限公司
 瑞士精工集團有限公司
 瑞士精工集團有限公司

Member of the SGS Group (SGS SA)

Annex 2: Analysis Result of Molding Compound (Page 5 of 7)



Test Report

No. CANEC1100147901

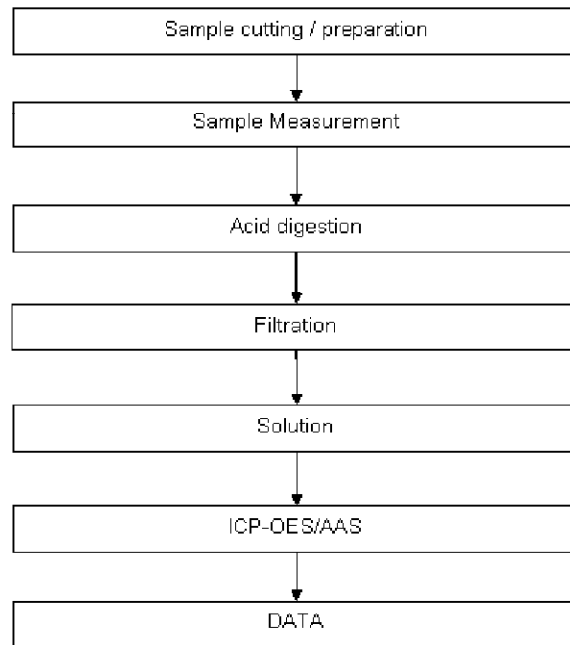
Date: 17 Jan 2011

Page 5 of 7

ATTACHMENTS

Elementary Testing Flow Chart

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



This measurement is based on the principle of the detection of the element's characteristic spectral lines emitted or absorbed on transition of the electron energy level, and the intensity of the spectral lines is proportional to the concentration of the element. The detection limit is determined by the instrument and the operator. The detection limit is not absolute, and it is affected by the detection method, the detection instrument, the detection environment, the detection operator, and the detection sample. The detection limit is not absolute, and it is affected by the detection method, the detection instrument, the detection environment, the detection operator, and the detection sample. The detection limit is not absolute, and it is affected by the detection method, the detection instrument, the detection environment, the detection operator, and the detection sample.



SGS (Singapore) Pte. Ltd. | 100 Robinson Road, Singapore 068903 | Tel: (65) 6349 0000 | Fax: (65) 6349 0001
SGS (China) Co., Ltd. | 100000 Shanghai, China | Tel: (86) 21 6349 0000 | Fax: (86) 21 6349 0001

Member of the SGS Group (SGL SA)

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



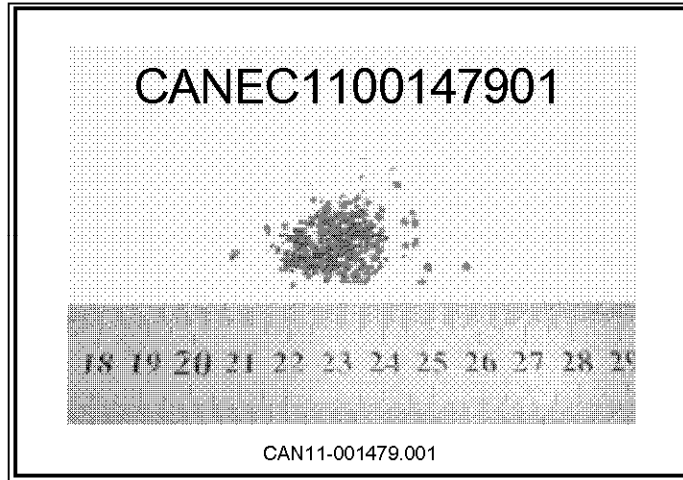
Test Report

No. CANEC1100147901

Date: 17 Jan 2011

Page 7 of 7

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

This document is issued by the Singapore branch of the Swiss entity SGS S.A. (the "issuing entity") and is subject to the terms and conditions of the contract for analysis services entered into between the issuing entity and the client. The issuing entity is not liable for any damage or loss arising from the use of this document. The client is responsible for the accuracy of the information provided to the issuing entity. The issuing entity is not liable for any damage or loss arising from the use of this document. The client is responsible for the accuracy of the information provided to the issuing entity. The issuing entity is not liable for any damage or loss arising from the use of this document. The client is responsible for the accuracy of the information provided to the issuing entity.



SGS S.A. | 100, Rue de la Gare, 2000 Neuchâtel, Switzerland | Tel: +41 31 735 1111 | Fax: +41 31 735 1112
SGS (Singapore) Pte. Ltd. | 100, Cross Street, Singapore 054212 | Tel: +65 6336 8888 | Fax: +65 6336 8889

Member of the SGS Group (SGS SA)

Annex 3: Analysis Result of Die-Attach Solder (Page 1 of 6)



Test Report

No. SHAEC1103514907

Date: 29 Mar 2011

Page 1 of 6

Heraeus (Zhaoyuan) Metal Materials Co., Ltd/Heraeus Zhaoyuan (Changshu) Electronic Materials Co., Ltd.

No.238 Linglong Road Zhaoyuan Shandong/Huangpujiang Road, Changshu Southeast Economic Development Zone, Changshu, Jiangsu

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

SGS Job No. : SP11-007989 - SH

Model No. : PbSn2Ag2.5

Date of Sample Received : 23 Mar 2011

Testing Period : 23 Mar 2011 - 29 Mar 2011

Test Requested : Selected test(s) as requested by client.

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

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

Conclusion : Based on the performed tests on submitted samples, the results comply with the RoHS Directive 2002/95/EC and its subsequent amendments.

Signed for and on behalf of
SGS-CSTC Ltd.Fan Jingjie, JJ
Approved Signatory

The documents issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions, are valid for electronic format documents subject to terms and conditions for Electronic Documents at www.sgs.com/terms_and_conditions. Attention is drawn to the limitation of liability and exclusion clauses defining the main functions of this document to assist the recipient's understanding of the Company's findings in the event of any dispute arising out of the results of the tests. The Company's sole responsibility is to its Client and the document does not constitute parties to a transaction or any other legal relationship. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.

SGS (Shanghai) Inspection & Certification Co., Ltd. 889 Yixian Road Xuhui District Shanghai China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233TEL: (86-21) 54326553 FAX: (86-21) 64953679 www.cn.sgs.com
HL: (86-21) 61432694 HL: (86-21) 54903253 sgs@cn.sgs.com

Member of the SGS Group (SGS SA)

Annex 3: Analysis Result of Die-Attach Solder (Page 2 of 6)



Test Report

No. SHAEC1103514907

Date: 29 Mar 2011

Page 2 of 6

Test Results :

Test Part Description :

| Specimen No. | SGS Sample ID | Description |
|--------------|------------------|--------------------|
| 1 | SHA11-035149.004 | Silvery metal wire |

Remarks :

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

RoHS Directive 2002/95/EC

Test Method : With reference to IEC 62321:2008

- (1) Determination of Cadmium by ICP-OES.
- (2) Determination of Lead by ICP-OES.
- (3) Determination of Mercury by ICP-OES.
- (4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.
- (5) Determination of PBBs / PBDEs by GC-MS.

| Test Item(s) | Limit | Unit | MDL | 004 |
|----------------------------|-------|-------|-----|----------|
| Cadmium (Cd) | 100 | mg/kg | 2 | ND |
| Lead (Pb) | 1,000 | mg/kg | 2 | 944600▲* |
| Mercury (Hg) | 1,000 | mg/kg | 2 | ND |
| Hexavalent Chromium (CrVI) | - | - | ◇ | Negative |
| Sum of PBBs | 1,000 | mg/kg | - | ND |
| Monobromobiphenyl | - | mg/kg | 5 | ND |
| Dibromobiphenyl | - | mg/kg | 5 | ND |
| Tribromobiphenyl | - | mg/kg | 5 | ND |
| Tetrabromobiphenyl | - | mg/kg | 5 | ND |
| Pentabromobiphenyl | - | mg/kg | 5 | ND |
| Hexabromobiphenyl | - | mg/kg | 5 | ND |
| Heptabromobiphenyl | - | mg/kg | 5 | ND |
| Octabromobiphenyl | - | mg/kg | 5 | ND |
| Nonabromobiphenyl | - | mg/kg | 5 | ND |
| Decabromobiphenyl | - | mg/kg | 5 | ND |
| Sum of PBDEs | 1,000 | mg/kg | - | ND |
| Monobromodiphenyl ether | - | mg/kg | 5 | ND |

This document is issued by the Company subject to its General Conditions of Service printed separate, available on request or accessible at <http://www.sgs.com/terms>, and contains the analytical results and conclusions subject to the test conditions for the above documents at www.sgs.com/terms and document 2300. Attention is drawn to the limitation of liability and general disclaimer stated below. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction. The Company shall be free to publish the results and conclusions under the trademark of the Company. This document shall not be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written approval of the Company. The results shown in this test report refer only to the sample(s) tested.


 上海 SGS 有限公司
 中国·上海·徐汇区宜山路899号3号楼 邮编: 200233

 TEL: (86-21) 61402552 FAX: (86-21) 64953870
 HL: (86-21) 61402606 HL: (86-21) 64953833

www.cn.sgs.com
sgs@cn.sgs.com

Member of the SGS Group (SGS SA)

Annex 3: Analysis Result of Die-Attach Solder (Page 3 of 6)



Test Report

No. SHAEC1103514907

Date: 29 Mar 2011

Page 3 of 6

| Test Item(s) | Limit | Unit | MDL | 004 |
|--------------------------|-------|-------|-----|-----|
| Dibromodiphenyl ether | - | mg/kg | 5 | ND |
| Tribromodiphenyl ether | - | mg/kg | 5 | ND |
| Tetrabromodiphenyl ether | - | mg/kg | 5 | ND |
| Pentabromodiphenyl ether | - | mg/kg | 5 | ND |
| Hexabromodiphenyl ether | - | mg/kg | 5 | ND |
| Heptabromodiphenyl ether | - | mg/kg | 5 | ND |
| Octabromodiphenyl ether | - | mg/kg | 5 | ND |
| Nonabromodiphenyl ether | - | mg/kg | 5 | ND |
| Decabromodiphenyl ether | - | mg/kg | 5 | ND |

Notes :

(1) The maximum permissible limit is quoted from the document 2005/618/EC amending RoHS directive 2002/95/EC

(2) ◊ 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 50 cm² sample surface area.

For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing

(3) ▲=As declared by the applicant, the materials fall into exemption items according to EU directive 2002/95/EC(RoHS),and its subsequent amendments.

(4) *The test result is only for reference

Halogen

Test Method : With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

| Test Item(s) | Unit | MDL | 004 |
|---------------|-------|-----|-----|
| Fluorine (F) | mg/kg | 50 | ND |
| Chlorine (Cl) | mg/kg | 50 | ND |
| Bromine (Br) | mg/kg | 50 | ND |
| Iodine (I) | mg/kg | 50 | ND |

This document is issued by the Company subject to its General Conditions of Service printed and/or available on request or accessible at <http://www.sgs.com/terms>, and contains the confidential information of the Client, subject to the terms and conditions for the Client's Documents at www.sgs.com/terms and document 2300. Attention is drawn to the limitation of liability and guarantee clauses defined therein. Any holder of this document is advised that information contained herein is not to be used for any purpose other than that for which it was provided to the Client. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction. The Client shall be liable for the rights and obligations under the transaction documents. This document shall not be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. The results shown in this test report refer only to the sample(s) tested.



上海 SGS 检测技术有限公司
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

TEL: (86-21) 61402552 FAX: (86-21) 61402550
TEL: (86-21) 61402554 FAX: (86-21) 61402553

www.cn.sgs.com
e: shanghai@sgs.com

Member of the SGS Group (SGS SA)

Annex 3: Analysis Result Die-Attach Solder (Page 4 of 6)



Test Report

No. SHAEC1103514907

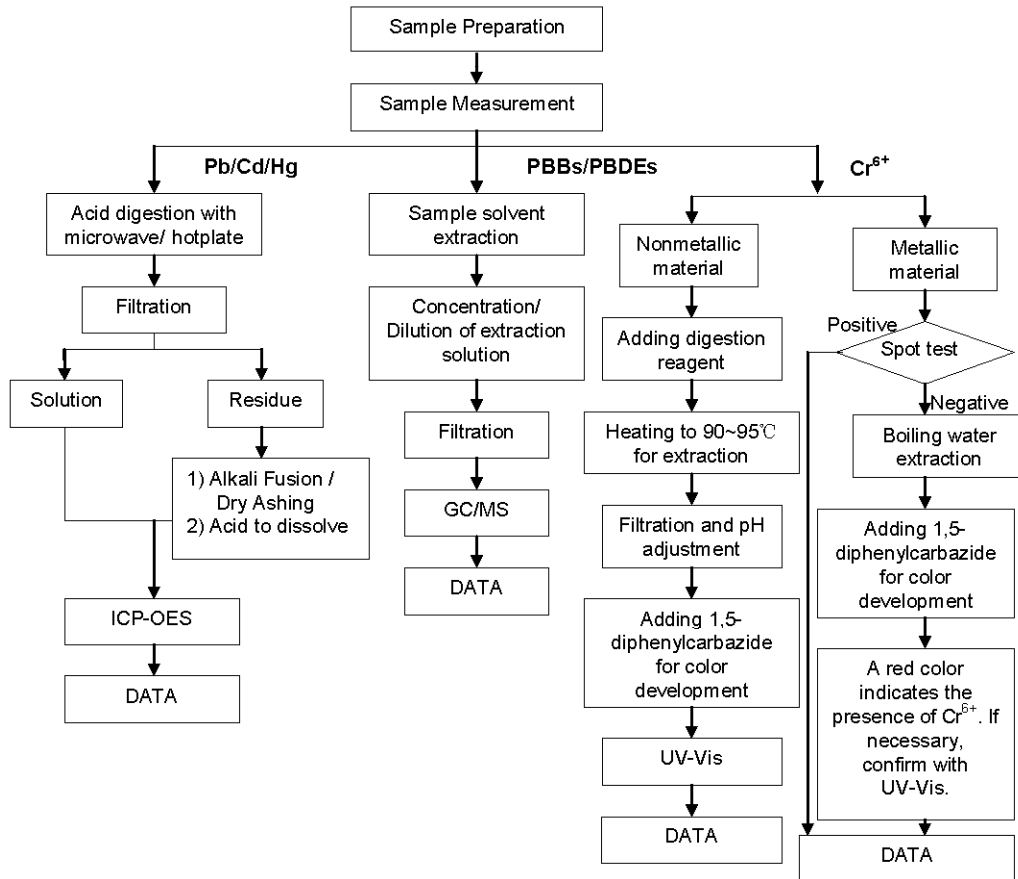
Date: 29 Mar 2011

Page 4 of 6

ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Allen Xiao/ Even Xu / Andy Zhao /Gary Xu
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Elim Lin
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ and PBBs/PBDEs test method excluded)



This document is issued by the Company subject to its General Conditions of Service printed and/or available on internet or accessible at <http://www.sgs.com/terms> and contains the intellectual property and confidential source defined therein. Any holder of this document is advised that information contained herein is the property of the Company. At the time of the preparation and delivery in the hands of Client's institutions, if any, the Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction. The Company shall be free to use the rights and obligations under the trademark documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. The results shown in this test report refer only to the sample(s) tested.



上海 SGS 有限公司
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

TEL: (86-21) 61402557 FAX: (86-21) 64959370
TEL: (86-21) 61402604 FAX: (86-21) 64959370

www.cn.sgs.com
e: ks@shanghai.sgs.com

Member of the SGS Group (SGS SA)

Annex 3: Analysis Result Die-Attach Solder (Page 5 of 6)



Test Report

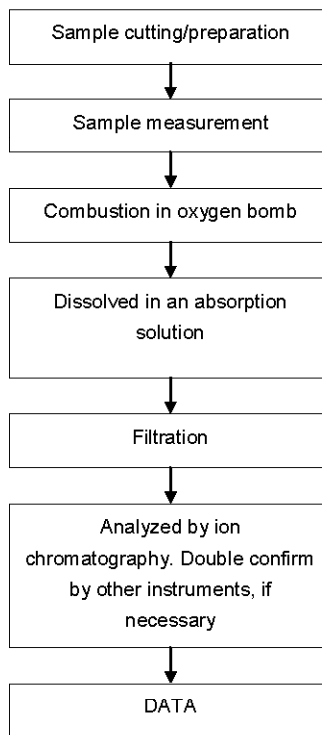
No. SHAEC1103514907

Date: 29 Mar 2011

Page 5 of 6

Halogen Testing Flow Chart

- 1) Name of the person who made testing: Daisy Gong
- 2) Name of the person in charge of testing: Alex Jiang



This document is issued by the Company subject to its General Conditions of Service printed separately, available on request or accessible at <http://www.sgs.com/terms>, and contains the name and the economic, financial, technical, and legal information subject to the terms and conditions for the Company's Documents at www.sgs.com/terms and document 2300. Attention is drawn to the limitation of liability and the exclusion of any and all warranties, express or implied, in this document. The Company's liability is limited to the extent of the information and data within the limits of the Company's instructions. If any, the Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction. The Company is not liable for the rights and obligations under the transaction documents. This document cannot be reproduced except in full, without the prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. The results shown in this test report refer only to the sample(s) tested.



上海 SGS 检测技术有限公司
 中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

TEL: (86-21) 61402552 FAX: (86-21) 64953870
 HL: (86-21) 61402606 HL: (86-21) 61402606

www.sgs.com
 e: inspection@sgs.com

Member of the SGS Group (SGS SA)

Annex 3: Analysis Result Die-Attach Solder (Page 6 of 6)



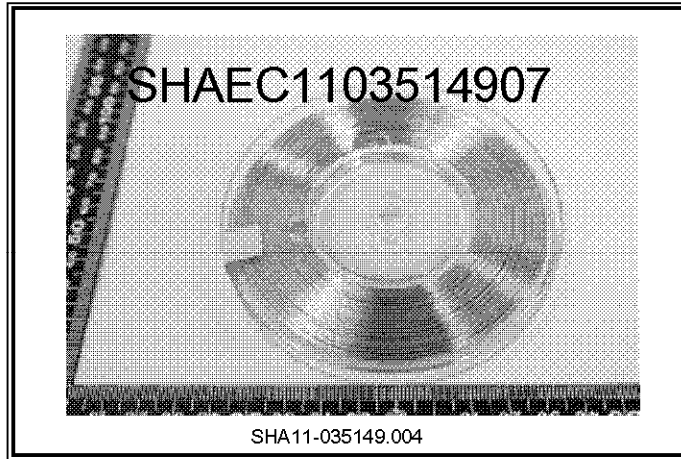
Test Report

No. SHAEC1103514907

Date: 29 Mar 2011

Page 6 of 6

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

This document is issued by the Company subject to its General Conditions of Service printed and/or available on request or accessible at http://www.sgs.com/terms_and_conditions. The analysis is performed in accordance with the applicable standards and specifications for the analysis. The Company is not responsible for the results of the analysis if the sample is not representative of the material and/or if the analysis is performed in violation of the applicable standards and specifications. The Company's sole responsibility is to its Client and this document does not constitute a warranty of any kind. The Company is not responsible for the results of the analysis if the analysis is performed in violation of the applicable standards and specifications. This document cannot be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without the prior written permission of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. The results shown in this test report refer only to the sample(s) tested.



SGS
Société Générale de Surveillance

上海总部
中国·上海·徐汇区宜山路899号3号楼 邮编: 200233

TEL: (86-21) 61402552 FAX: (86-21) 61402550
TEL: (86-21) 61402554 FAX: (86-21) 61402553

www.cn.sgs.com
e: sgs@cn.sgs.com

Member of the SGS Group (SGS SA)

Annex 4: Analysis Result of Die-bonding Wire (Page 1 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 Issued Date: May 30, 2011 Page 1 of 16

To: **HERAEUS ORIENTAL HITEC CO.,LTD.**

587-122
Hakik-dong
Nam-gu
Incheon
Korea

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

Product Name : Au wire

SGS File No. : AYAA11-15562

Item No./Part No. : 4N

Client Reference Date : HD2 (Be), HD3, HD5 (Ce), HD6 (Ca), HA5, HA6, HA9, HA11, AW7, AW13, AW14, AW25, AW29, AW66X

Received Date : May 12, 2011

Test Performing Date : May 13, 2011 to May 30, 2011

Test Performed : SGS Korea tested the sample(s) selected by applicant with following results
This test report contains result performed by subcontracted laboratory in agreement with the applicant. The result is marked with crosshatch(#) in this report.

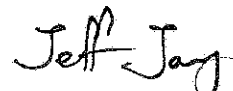
Test Result(s) : For further details, please refer to following page (s)

Buyer(s) : AMKOR, HYNIX, ASAHI KASEI, ASE KR, SCK, FUJITSU, NIGATA SEIMITSU

Comments : The client has confirmed that the described client reference data are the same with the sample submitted.

Timothy Jeon
Jinhee Kim
Cindy Park
Jerry Jung / Testing Person

SGS Korea Co., Ltd.



Jeff Jang / Technical Mgr

This document is issued by the Company subject to its General Conditions of Service printed hereon, available on request, or accessible at www.sgslab.com/eng/and_english.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgslab.com/eng/electronic.htm. It is an analytical report and a solution is not provided here. Any result of this document is subject to the final interpretation and decision of the Company. All rights are reserved and no part of this document is to be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written approval of the Company. Any use of the data contained hereon or appearance of this document in other media and/or formats may be prosecuted to the full extent of the law. If these analyses are used, the user is bound to the responsibility of the reported result and such responsibility is not shared by the Company.

F052 Version4

SGS Korea Co., Ltd. 322, The O valley, 555-9, Hogeje-dong, Dongan-gu, Anyang-si, Gyeonggi-do, Korea 431-080.
t +82 (0)31 4808 000 f +82 (0)31 4808 059 <http://www.sgslab.co.kr> www.kr.sgs.com sales@sgslab.com

Member of the SGS Group (Société Générale de Surveillance)

Annex 4: Analysis Result of Die-bonding Wire (Page 2 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 **Issued Date:** May 30, 2011 **Page 2 of 16**

Sample No. : AYAA11-15562
Sample Description : Au wire
Item / Part No. : 4N

| Heavy Metals | | | | |
|--|-------|--|-----|----------|
| Test Items | Unit | Test Method | MDL | Results |
| Cadmium(Cd) | mg/kg | With reference to IEC 62321:2008,ICP | 0.5 | N.D |
| Lead (Pb) | mg/kg | With reference to IEC 62321:2008,ICP | 5 | N.D |
| Mercury (Hg) | mg/kg | With reference to IEC 62321:2008,ICP | 2 | N.D |
| Hexavalent Chromium(CrVI) By boiling water extraction* | ** | With reference to IEC 62321:2008 | - | Negative |
| Beryllium (Be) | mg/kg | US EPA 3050B (1996),US EPA 6010B(1996),ICP | 0.5 | N.D |
| Phosphorous (P) | mg/kg | US EPA 3050B (1996),US EPA 6010B(1996),ICP | 10 | N.D |
| Antimony (Sb) | mg/kg | US EPA 3050B (1996),US EPA 6010B(1996),ICP | 10 | N.D |
| Flame Retardants-PBBs/PBDEs | | | | |
| Test Items | Unit | Test Method | MDL | Results |
| Monobromobiphenyl | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Dibromobiphenyl | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Tribromobiphenyl | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Tetrabromobiphenyl | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Hexabromobiphenyl | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Pentabromobiphenyl | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Heptabromobiphenyl | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Octabromobiphenyl | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Nonabromobiphenyl | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Decabromobiphenyl | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Monobromodiphenyl ether | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Dibromodiphenyl ether | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Tribromodiphenyl ether | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Tetrabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Pentabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Hexabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Heptabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Octabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Nonabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |
| Decabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008,GC-MS | 5 | N.D |

This document is issued by the Company subject to its General Conditions of Service printed hereon, available on request, or accessible at www.sgslab.co.kr and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgslab.co.kr. The Company's sole responsibility is to provide the information and data on issues defined herein. Any matter of this document published in electronic format and version of data, the Company's responsibility is to provide the information and data on issues defined herein. The Company's sole responsibility is to provide the information and data on issues defined herein. Any matter of this document published in electronic format and version of data, the Company's responsibility is to provide the information and data on issues defined herein. The document cannot be copied, sold, reprinted, or otherwise used without the prior written permission of the Company. Any use of the information, singly or in combination, of this document is prohibited and/or limited by the applicable laws and regulations. The document cannot be copied, sold, reprinted, or otherwise used without the prior written permission of the Company.

Annex 4: Analysis Result of Die-bonding Wire (Page 3 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 **Issued Date:** May 30, 2011 **Page 3 of 16**

Sample No. : AYAA11-15562
Sample Description : Au wire
Item / Part No. : 4N

| Formaldehyde Contents | | | | |
|-----------------------|-------|---------------------|-----|---------|
| Test Items | Unit | Test Method | MDL | Results |
| Formaldehyde | mg/kg | ISO 14184-1, UV-vis | 20 | N.D |

| Phthalates | | | | |
|----------------------------------|-------|--------------------|-----|---------|
| Test Items | Unit | Test Method | MDL | Results |
| Di-n-octyl phthalate (DNOP) | mg/kg | US EPA 8061A,GC/MS | 50 | N.D |
| Di-isononyl phthalate (DINP) | mg/kg | US EPA 8061A,GC/MS | 50 | N.D |
| Di-isodecyl phthalate (DIDP) | mg/kg | US EPA 8061A,GC/MS | 50 | N.D |
| Di-methyl phthalate (DMP) | mg/kg | US EPA 8061A,GC/MS | 50 | N.D |
| Di-ethyl phthalate(DEP) | mg/kg | US EPA 8061A,GC/MS | 50 | N.D |
| Di-cyclohexyl phthalate (DCHP) | mg/kg | US EPA 8061A,GC/MS | 50 | N.D |
| Di-n-hexyl phthalate (DNHP) | mg/kg | US EPA 8061A,GC/MS | 50 | N.D |
| Di-pentyl phthalate(DPP) | mg/kg | US EPA 8061A,GC/MS | 50 | N.D |
| Di-propyl phthalate(DPrP) | mg/kg | US EPA 8061A,GC/MS | 50 | N.D |
| Di-isoctyl phthalate (DIOP) | mg/kg | US EPA 8061A,GC/MS | 50 | N.D |
| Di-n-nonyl phthalate (DNP) | mg/kg | US EPA 8061A,GC/MS | 50 | N.D |
| Di-(2-ethylhexyl) adipate (DEHA) | mg/kg | US EPA 8061A,GC/MS | 50 | N.D |

| Halogen Contents | | | | |
|------------------|-------|---------------------|-----|---------|
| Test Items | Unit | Test Method | MDL | Results |
| Bromine(Br) | mg/kg | BS EN 14582:2007,IC | 30 | N.D |
| Chlorine(Cl) | mg/kg | BS EN 14582:2007,IC | 30 | N.D |
| Fluorine(F) | mg/kg | BS EN 14582:2007,IC | 30 | N.D |
| Iodine(I) | mg/kg | BS EN 14582:2007,IC | 50 | N.D |

This document is issued by the Company subject to its General Conditions of Service printed over our analysis reports or accessible at www.sgslab.com/eng/and_our_service.html and, for electronic formal documents, subject to Terms and Conditions for Electronic Documents at www.sgslab.com/eng/electronic_documents.html. All our analyses are performed in accordance with the ISO 17025 standard and all our test methods are defined under a fully accredited test method in conformity with ISO 17025. The Company does not accept any responsibility for the accuracy of the results of the analyses performed by the Company. Any data or analysis results, together with our test methods or apparatus used, shall be the property of the Company. The document cannot be reproduced except in full without the prior written permission of the Company. Any data or analysis results, together with our test methods or apparatus used, shall be the property of the Company. The document cannot be reproduced except in full without the prior written permission of the Company.

Annex 4: Analysis Result of Die-bonding Wire (Page 4 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 **Issued Date:** May 30, 2011 **Page 4 of 16**

Sample No. : AYAA11-15562
Sample Description : Au wire
Item / Part No. : 4N

| Asbestos | | | | |
|-----------------|------|---|-----|----------|
| Test Items | Unit | Test Method | MDL | Results |
| Anthrophyllite | ** | With reference to EPA/600/R-93/116 and USP, PLM and FT-IR | - | Negative |
| Crocodolite | ** | With reference to EPA/600/R-93/116 and USP, PLM and FT-IR | - | Negative |
| Amosite | ** | With reference to EPA/600/R-93/116 and USP, PLM and FT-IR | - | Negative |
| Tremolite | ** | With reference to EPA/600/R-93/116 and USP, PLM and FT-IR | - | Negative |
| Chrysotile | ** | With reference to EPA/600/R-93/116 and USP, PLM and FT-IR | - | Negative |
| Actinolite | ** | With reference to EPA/600/R-93/116 and USP, PLM and FT-IR | - | Negative |

| Chlorinated Organic Substances | | | | |
|---------------------------------------|-------|--------------------|-----|---------|
| Test Items | Unit | Test Method | MDL | Results |
| Polychlorinated Biphenyls (PCBs) | mg/kg | USEPA 8082 , GC/MS | 3 | N.D |
| Polychlorinated terphenyls (PCTs) | mg/kg | USEPA 8082 , GC/MS | 3 | N.D |
| Polychlorinated Naphthalene (PCN) | mg/kg | EPA 8081 A , GC/MS | 5 | N.D |

| Polymer Identification | | | | |
|-------------------------------|------|-------------|-----|----------|
| Test Items | Unit | Test Method | MDL | Results |
| PVC free | ** | FT-IR | - | Negative |

| Organotin Compounds | | | | |
|-------------------------------|-------|----------------------|-----|---------|
| Test Items | Unit | Test Method | MDL | Results |
| Tributyltin (TBT) | mg/kg | DIN 38407-13 , GC/MS | 0.1 | N.D |
| Bis (tributyltin)oxide (TBTO) | mg/kg | DIN 38407-13 , GC/MS | 0.1 | N.D |
| Triphenyltin (TPhT) | mg/kg | DIN 38407-13 , GC/MS | 0.1 | N.D |

| Ozone Depleting Substances | | | | |
|---|-------|----------------------|-----|---------|
| Test Items | Unit | Test Method | MDL | Results |
| Trichlorofluoromethane (CFC-11) | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Dichlorodifluoromethane (CFC-12) | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113) | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Dichlorotetrafluoroethane (CFC-114) | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Chloropentafluoroethane (CFC-115) | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Chlorotrifluoromethane (CFC-13) | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Pentachlorofluoroethane (CFC-111) | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Tetrachlorodifluoroethane (CFC-112) | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Heptachlorofluoropropane (CFC-211) | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |

This document is issued by the Company subject to its General Conditions of Service printed hereon, available on request, or accessible at www.sgslab.co.kr and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgslab.co.kr. The Company does not accept any liability for any loss or damage caused by the use of this document, including but not limited to, the use of this document for any purpose other than that intended by the Company. The document is provided for your information only and does not constitute an offer of any service. The document cannot be copied, sold, leased, or otherwise distributed without the prior written consent of the Company. Any use of this document, including its reproduction, distribution, or otherwise, is prohibited without the prior written consent of the Company. The document is provided for your information only and does not constitute an offer of any service. The document cannot be copied, sold, leased, or otherwise distributed without the prior written consent of the Company.

F052 Version4

SGS Korea Co., Ltd. 322, The O valley, 555-9, Hogeje-dong, Dongan-gu, Anyang-si, Gyeonggi-do, Korea 431-080
 t +82 (0)31 4808 000 f +82 (0)31 4808 059 <http://www.sgslab.co.kr> www.kr.sgs.com sales@sgslab.co.kr

Member of the SGS Group (Société Générale de Surveillance)

Annex 4: Analysis Result of Die-bonding Wire (Page 6 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 **Issued Date:** May 30, 2011 **Page 6 of 16**

Sample No. : AYAA11-15562
Sample Description : Au wire
Item / Part No. : 4N

| Ozone Depleting Substances | | | | |
|-------------------------------------|-------|----------------------|-----|---------|
| Test Items | Unit | Test Method | MDL | Results |
| Dibromodifluoromethane (Halon-1202) | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-21b2 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-22b1 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-31b1 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-121b4 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-122b3 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-123b2 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-124b1 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-131b3 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-132b2 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-123b1 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-141b2 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-142b1 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-151b1 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-221b6 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-222b5 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-223b4 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-224b3 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-225b2 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-226b1 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-231b5 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-232b4 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-233b3 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-234b2 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-235b5 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-241b4 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-241b3 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-243b2 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-244b1 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-251b2 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-252b2 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-253b1 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-261b2 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-262b1 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| HBFC-271b1 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-21 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-22 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-31 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |

This document is issued by the Company subject to its General Conditions of Service printed hereon, available on request, or accessible at www.sgslab.co.kr and www.sgs.com and, in electronic format, documents subject to Terms and Conditions of Electronic Documents at www.sgslab.co.kr. The Company assumes no responsibility for the accuracy and reliability of the data and information contained herein. Any modification of this document is subject to the terms and conditions of the Company's documents. This document cannot be copied, sold, retransmitted, or otherwise disseminated without the prior written approval of the Company. Any use of the data and information contained herein for purposes other than those intended by the Company may be prosecuted to the full extent of the law.

F052 Version4

SGS Korea Co., Ltd. 322, The O valley, 555-9, Hogeje-dong, Dongan-gu, Anyang-si, Gyeonggi-do, Korea 431-080
 t +82 (0)31 4808 000 f +82 (0)31 4808 059 <http://www.sgslab.co.kr> www.kr.sgs.com sales@sgslab.com

Member of the SGS Group (Société Générale de Surveillance)

Annex 4: Analysis Result of Die-bonding Wire (Page 7 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 **Issued Date:** May 30, 2011 **Page 7 of 16**

Sample No. : AYAA11-15562
Sample Description : Au wire
Item / Part No. : 4N

| Ozone Depleting Substances | | | | |
|-------------------------------|-------|----------------------|-----|---------|
| Test Items | Unit | Test Method | MDL | Results |
| Hydrochlorofluorocarbon-121 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-122 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-123 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-124 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-131 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-132b | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-133a | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-141b | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-221 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-222 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-223 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-224 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-225ca | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-225cb | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-226 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-231 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-232 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-233 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-234 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-235 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-241 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-242 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-243 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-244 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-251 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-252 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-253 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-261 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-262 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrochlorofluorocarbon-271 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-23 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-41 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-43-10mee | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-125 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-134 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-134a | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-143 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-143a | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |

This document is issued by the Company subject to its General Conditions of Service printed hereon, available on request, or accessible at www.sgslab.co.kr and www.sgslab.com and, in electronic format, documents subject to Terms and Conditions for Electronic Documents at www.sgslab.co.kr. The Company does not assume any liability for any loss or damage caused by the use of this document, published by the Company, in any form or by any means, and the Company shall not be held responsible for any loss or damage caused by the use of this document, published by the Company, in any form or by any means, and the Company shall not be held responsible for any loss or damage caused by the use of this document, published by the Company, in any form or by any means. This document cannot be copied, sold, reprinted, or otherwise used without the prior written permission of the Company. Any use of this document, in any form or by any means, without the prior written permission of the Company, is strictly prohibited. This document cannot be copied, sold, reprinted, or otherwise used without the prior written permission of the Company.

F052 Version4

SGS Korea Co., Ltd. 322, The O valley, 555-9, Hogeje-dong, Dongan-gu, Anyang-si, Gyeonggi-do, Korea 431-080
 t +82 (0)31 4808 000 f +82 (0)31 4808 059 <http://www.sgslab.co.kr> www.kr.sgs.com sales@sgslab.com

Member of the SGS Group (Société Générale de Surveillance)

Annex 4: Analysis Result of Die-bonding Wire (Page 8 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 Issued Date: May 30, 2011 Page 8 of 16

Sample No. : AYAA11-15562
 Sample Description : Au wire
 Item / Part No. : 4N

| Ozone Depleting Substances | | | | |
|--------------------------------------|-------|----------------------|-----|---------|
| Test Items | Unit | Test Method | MDL | Results |
| Hydrofluorocarbon-152a | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-227ea | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-236fa | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-236ea | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-245ca | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-245fa | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Hydrofluorocarbon-365mfc | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Freon 14 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Fluorocarbon 116 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Freon 218 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Decafluorobutane | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Freon 318 | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Perfluoro-1-butane | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Perfluoroisobutene | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| 1,4-Dihydrooctafluorobutane | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Nonafluoro-2-(trifluoromethyl)butane | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Perfluoro-n-pentane | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| 2-Perfluoromethylpentane | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |
| Perfluorohexane | mg/kg | US EPA 8260B , GC/MS | 0.1 | N.D |

| Azo Dyes | | | | |
|---|-------|--------------------------------------|-----|---------|
| Test Items | Unit | Test Method | MDL | Results |
| 4-Aminodiphenyl | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| Benzidine | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 4-Chloro-o-Toluidine | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 2-Naphthylamine | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| o-Aminoazotoluene | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 2-Amino-4-Nitrotoluene | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| p-Chloroaniline | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 2,4-Diaminoanisole | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 4,4'-Diaminodiphenylmethane | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 3,3'-Dichlorobenzidine | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 3,3-Dimethoxybenzidine | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 3,3-Dimethylbenzidine | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 3,3-Dimethyl-4,4'-diaminodiphenyl Methane | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| p-Cresidine | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 4,4'-Methylen-bis-(2-chloroaniline) | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |

This document is issued by the Company subject to its General Conditions of Service printed hereon, available on request, or accessible at www.sgslab.com/eng/and_eng/and_eng.html, or electronic format documents subject to Terms and Conditions for Electronic Documents at www.sgslab.com/eng/electronic_documents.html. The Company does not accept any liability for any loss or damage caused by the use of this document, including but not limited to, the use of this document for any purpose other than that for which it was intended. The document cannot be copied, sold, reprinted, or otherwise disseminated without the prior written approval of the Company. Any use of this document, in whole or in part, without the prior written approval of the Company is strictly prohibited. This document is issued in its original form and any reproduction of this document in any other form is prohibited. The document is issued in its original form and any reproduction of this document in any other form is prohibited.

Annex 4: Analysis Result of Die-bonding Wire (Page 9 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 Issued Date: May 30, 2011 Page 9 of 16

Sample No. : AYAA11-15562
Sample Description : Au wire
Item / Part No. : 4N

| Azo Dyes | | | | |
|------------------------|-------|--------------------------------------|-----|---------|
| Test Items | Unit | Test Method | MDL | Results |
| 4,4'-Oxydianiline | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 4-Aminodiphenyl | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| o-Toluidine | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 2,4-Toluenediamine | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 2,4,5-Trimethylaniline | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| o-Anisidine | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 4-Aminoazobenzene | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 2,4-Xyldine | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |
| 2,6-Xyldine | mg/kg | LFGB 64 BVL B 82.02.2 , GC/MS & HPLC | 5 | N.D |

| Other(s) | | | | |
|--|-------|---------------------------|-----|---------|
| Test Items | Unit | Test Method | MDL | Results |
| PFOA(Perfluorooctanoic acid) | mg/kg | US EPA 3540C/3550C, LC/MS | 1 | N.D |
| PFOS(Perfluorooctane Sulfonates-Acid/Metal Salt/Amide) | mg/kg | US EPA 3540C/3550C, LC/MS | 1 | N.D |
| Benztotriazole (UV-320) | mg/kg | US EPA 3540C, GC/MS | 5 | N.D |

Note :

- (1) n.d.= not detected
- (2) mg/kg = ppm
- (3) MDL = Method Detection Limit
- (4) _ = No regulation
- (5) ** = Qualitative analysis (No Unit)
- (6) * = 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 50 cm2 sample surface area.

This document is issued by the Company subject to its General Conditions of Service printed hereon, available on request or accessible at www.sgslab.com/eng/and_english.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgslab.com/eng/electronic_documents.html. The Company does not accept any liability for any loss or damage caused by the use of this document, published by the Company, and does not accept any liability for any loss or damage caused by the use of this document, published by the Company, and does not accept any liability for any loss or damage caused by the use of this document, published by the Company, and does not accept any liability for any loss or damage caused by the use of this document, published by the Company.

Annex 4: Analysis Result of Die-bonding Wire (Page 10 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 **Issued Date:** May 30, 2011 **Page** 10 of 16

Sample No. : AYAA11-15562
Sample Description : Au wire
Item / Part No. : 4N

| Test Item(s) | Unit | Method | Result |
|----------------------------|-----------|----------------|-----------|
| Radioactive Substances (#) | μSv/ hour | Geiger counter | Negative* |

NOTE: (1) N.D.= Not detected
 (2) mg/kg= ppm : 0.1wt% = 1000ppm
 (3) MDL = Method Detection Limit
 (4) -=No regulation
 (5) **=Qualitative analysis (No Unite)
 (6) Negative*/Positive* : The test result of Geiger counter is from comparison between test outcome and environment background . In general ,there is little radiation dose existing in environment .
 (Radiation dose from environment background usually less than or equal to 0.10±0.05 μSv/ hour)
 The test result less than environment background was shown as Negative * , the result greater than environment background was shown as Positive* .

This document is issued by the Company subject to its General Conditions of Service printed hereon, available on request, or accessible at www.sgslab.co.kr and www.sgs.com and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgslab.co.kr. The Company does not accept any liability for any loss or damage arising from the use of this document, published by the Company, in any form or by any means, and the Company shall not be liable for any loss or damage arising from the use of this document, published by the Company, in any form or by any means, and the Company shall not be liable for any loss or damage arising from the use of this document, published by the Company, in any form or by any means. The document cannot be copied, sold, loaned, or otherwise disseminated without the prior written approval of the Company. Any use of the information, singly or in combination, of this document is strictly prohibited without the prior written approval of the Company. Any use of the information, singly or in combination, of this document is strictly prohibited without the prior written approval of the Company. Any use of the information, singly or in combination, of this document is strictly prohibited without the prior written approval of the Company.

F052 Version4

SGS Korea Co., Ltd. 322, The O valley, 555-9, Hogeje-dong, Dongan-gu, Anyang-si, Gyeonggi-do, Korea 431-080
 t +82 (0)31 4808 000 f +82 (0)31 4808 059 <http://www.sgslab.co.kr> www.kr.sgs.com surveillance@sgslab.co.kr
 Member of the SGS Group (Société Générale de Surveillance)

Annex 4: Analysis Result of Die-bonding Wire (Page 11 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 Issued Date: May 30, 2011 Page 11 of 16

Picture of Sample as Received :



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request, or accessible at www.sgslab.com/eng/and_english.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgslab.com/eng/electronic_documents.htm. It is the property of the Company and is loaned to you and is not to be distributed, copied, reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written approval of the Company. Any use not authorized by the Company or any alteration to the content or appearance of this document is prohibited and is subject to legal prosecution. This document cannot be copied and distributed without the prior written approval of the Company. Any use not authorized by the Company or any alteration to the content or appearance of this document is prohibited and is subject to legal prosecution.

F052 Version4

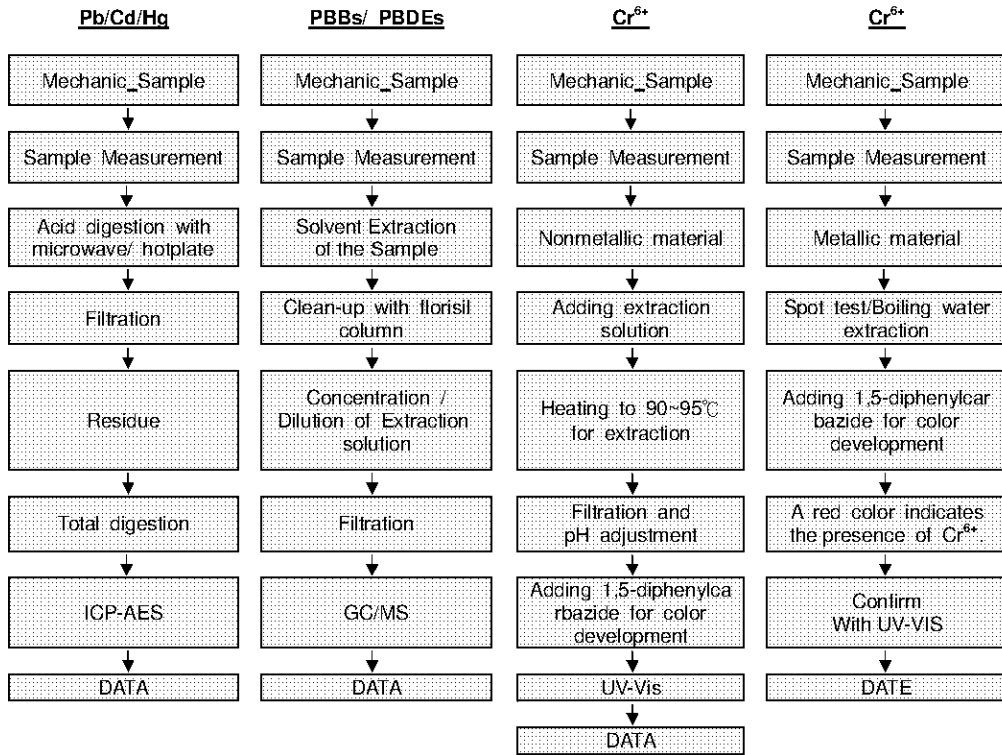
SGS Korea Co., Ltd. 322, The O valley, 555-9, Hogeje-dong, Dongan-gu, Anyang-si, Gyeonggi-do, Korea 431-080
t +82 (0)31 4808 000 f +82 (0)31 4808 059 <http://www.sgslab.co.kr> www.kr.sgslab.com www.sgslab.com
Member of the SGS Group (Société Générale de Surveillance)

Annex 4: Analysis Result of Die-bonding Wire (Page 12 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 Issued Date: May 30, 2011 Page 12 of 16

Testing Flow Chart for RoHS: Pb/Cd/Hg/Cr⁶⁺/PBBs & PBDEs Testing



The samples were dissolved totally by pre-conditioning method according to above flow chart for Cd,Pb,Hg.

Section Chief

Gilsae Yi

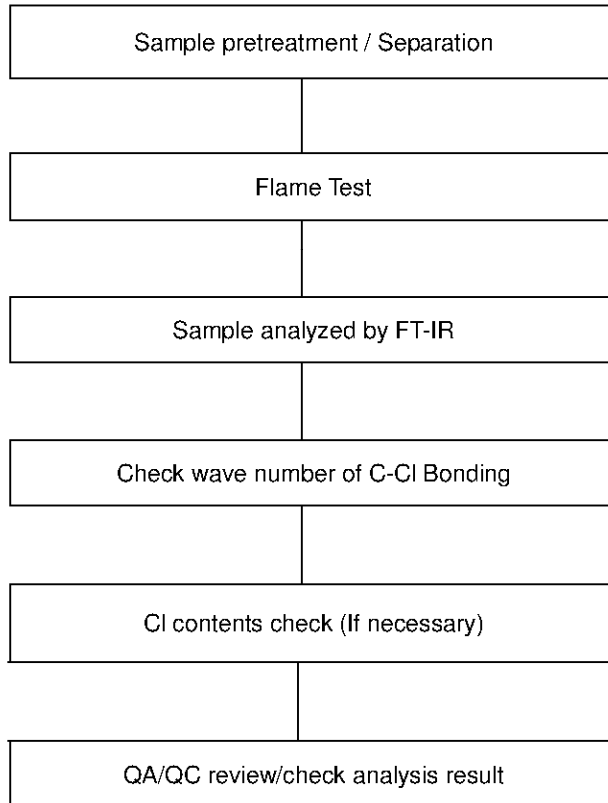
This document is issued by the Company subject to its General Conditions of Service printed hereon, available on request, or accessible at www.sgslab.com/eng/and_eng/and_eng.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgslab.com/eng/electronic_documents.html. The Company does not accept any liability for errors and omissions and is not responsible for any damage or loss of data caused by the use of this document. The document is subject to change without notice. The document is not intended to be used as a substitute for professional advice. The document is not intended to be used as a substitute for professional advice. The document is not intended to be used as a substitute for professional advice. The document is not intended to be used as a substitute for professional advice.

Annex 4: Analysis Result of Die-bonding Wire (Page 14 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 Issued Date: May 30, 2011 Page 14 of 16

Flow Chart for PVC Test



This document is issued by the Company subject to its General Conditions of Service printed hereon, available on request, or accessible at www.sgslab.com/eng/cond_serv.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgslab.com/eng/electronic_documents.htm. It is intended as a reference only and is not to be used as a basis for any legal action. The Company assumes no responsibility for the accuracy and reliability of the data and information contained herein. The Company does not warrant the accuracy, reliability, or completeness of the data and information contained herein. The Company does not warrant the accuracy, reliability, or completeness of the data and information contained herein. The Company does not warrant the accuracy, reliability, or completeness of the data and information contained herein. The Company does not warrant the accuracy, reliability, or completeness of the data and information contained herein.

F052 Version4

SGS Korea Co., Ltd. 322, The O valley, 555-9, Hogeje-dong, Dongan-gu, Anyang-si, Gyeonggi-do, Korea 431-080
t +82 (0)31 4808 000 f +82 (0)31 4808 059 <http://www.sgslab.co.kr> www.kr.sgs.com/sgrenlab

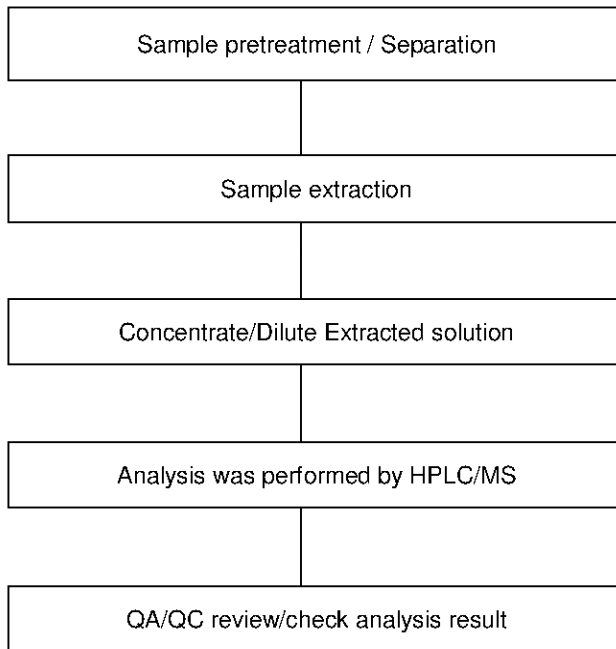
Member of the SGS Group (Société Générale de Surveillance)

Annex 4: Analysis Result of Die-bonding Wire (Page 15 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 Issued Date: May 30, 2011 Page 15 of 16

Flow Chart for PFOS/PFOA Test



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request, or accessible at www.sgslab.com/eng/and_english.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgslab.com/eng/electronic_documents.htm. It is only valid in connection with the order of analysis and a valid analysis report issued hereunder. Any modification of this document is subject to the mutual consent of the Client and the Company. All rights reserved. No part of this document may be reproduced without the written consent of the Company. The Company is not responsible for the content and appearance of this document in any form and under any circumstances. This document cannot be copied, sold, reprinted, or otherwise distributed without the prior approval of the Company. Any use of this document, in whole or in part, or any modification of its content or appearance in any form and under any circumstances, without the prior written consent of the Company, is prohibited. This document is for the sole use of the Client and its authorized personnel. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written consent of the Company.

F052 Version4

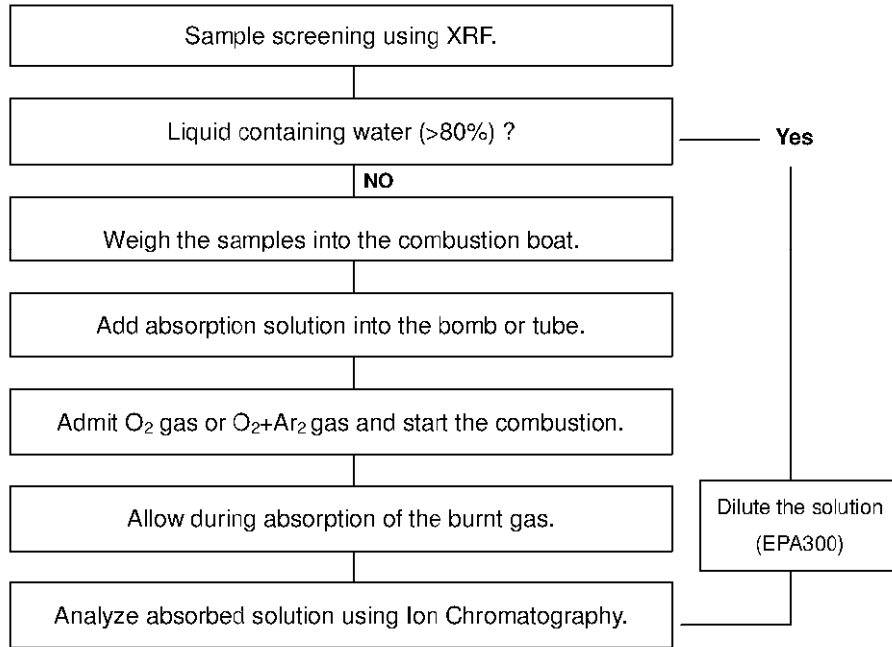
SGS Korea Co., Ltd. 322, The O valley, 555-9, Hoge-dong, Dongan-gu, Anyang-si, Gyeonggi-do, Korea 431-080.
t +82 (0)31 4806 000 f +82 (0)31 4806 059 <http://www.sgslab.co.kr> www.kr.sgs.com/sgsenglab
Member of the SGS Group (Société Générale de Surveillance)

Annex 4: Analysis Result of Die-bonding Wire (Page 16 of 16)



Test Report No. F690501/LF-CTSAYAA11-15562 Issued Date: May 30, 2011 Page 16 of 16

Flow Chart for Halogen Test



*** End ***

This document is issued by the Company subject to its General Conditions of Service printed over our standard forms, or accessible at www.sgslab.com/eng/and.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgslab.com/eng/electronic.html. It is the sole responsibility of the client to ensure that the information provided in this document is correct and that it is used for the intended purpose. The Company does not accept any liability for any loss or damage, including consequential loss or damage, arising from the use of this document. This document cannot be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of the Company. Any unauthorized use, copying, or distribution of this document is strictly prohibited. The document is the property of the Company and its contents may be produced in the form of a hard copy or otherwise.

F052 Version4

SGS Korea Co., Ltd. 322, The Ovalley, 555 9, Hogeje-dong, Dongan-gu, Anyang-si, Gyeonggi-do, Korea 431-080
 t +82 (0)31 4608 000 f +82 (0)31 4608 059 <http://www.sgslab.co.kr> www.kr.sgs.com/sgslab

Member of the SGS Group (Société Générale de Surveillance)

Annex 5: Analysis Result of Lead Frame (page 1 of 11)**Test Report**

No. 2107721/EC

Date : Jan 25 2011

Page 1 of 11

LEADFRAME TECHNOLOGY LIMITED
UNIT 04, G/F., LAI SUN YUEN LONG CENTRE
21 - 35 WANG YIP STREET EAST
YUEN LONG
N.T., HONG KONG

The following sample was submitted and identified on behalf of the applicant as:
LEADFRAME MADE OF COPPER ALLOY A194

SGS Job No. : 1436618
Lot No. : 110113
Manufacturer : LEADFRAME TECHNOLOGY LIMITED
Country of Origin : HONG KONG
Sample Receiving Date : JAN 14 2011
Testing Period : JAN 14 – 25 2011

Test Requested : Selected test (s) as requested by client.

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

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

Conclusion : 1) Based on the performed tests on submitted sample, the results comply with the RoHS Directive 2002/95/EC and its subsequent amendments.

4) When tested as specified, the submitted sample complies with the phthalate requirements under entries 51 and 52 of the Regulation (EC) No. 552/2009 amending Annex XVII of REACH Regulation (EC) No. 1907/2006 (previously restricted under Directive 2005/84/EC).

Signed for and on behalf of
SGS Hong Kong Ltd



Thu Hung Yat, Rodney
Section Manager


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm, and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-docs.html. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS Hong Kong Ltd | 5/F - 8/F & 28/F - 29/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong. t (852) 2334 4481-9 f (852) 2764 3126 www.hk.sgs.com

Member of the SGS Group (SGS SA)

Annex 5: Analysis Result of Lead Frame (page 2 of 11)



Test Report

No. 2107721/EC

Date : Jan 25 2011

Page 2 of 11

Test result:

1)

ID for sample 1 : 4120954002

Description for sample 1 : Metal w/ Silvery Plating (Base: Coppery Metal)

RoHS Directive 2002/95/EC

| Test Item(s) : | Unit | Test Method | Results | MDL | Limit |
|--|-------|---|-------------|-----|-------------|
| Cadmium(Cd) | mg/kg | With reference to IEC 62321:2008 and performed by ICP-OES | n.d. | 2 | 100 |
| Lead (Pb) | mg/kg | With reference to IEC 62321:2008 and performed by ICP-OES | 16 | 5 | 1000 |
| Mercury (Hg) | mg/kg | With reference to IEC 62321:2008 and performed by ICP-OES | n.d. | 2 | 1000 |
| Hexavalent Chromium (CrVI) by spot-test/ boiling-water-extraction | - | With reference to IEC 62321:2008 | Negative | - | # |
| Sum of PBBs | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | - | 1000 |
| Monobromobiphenyl | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Dibromobiphenyl | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Tribromobiphenyl | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Tetrabromobiphenyl | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Pentabromobiphenyl | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Hexabromobiphenyl | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Heptabromobiphenyl | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Octabromobiphenyl | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Nonabromobiphenyl | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Decabromobiphenyl | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-docs.html. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS Hong Kong Ltd | 5/F - 8/F & 28/F -29/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong. t (852) 2334 4481-9 f (852) 2764 3126 www.hk.sgs.com

Member of the SGS Group (SGS SA)

Annex 5: Analysis Result of Lead Frame (page 3 of 11)



Test Report

No. 2107721/EC

Date : Jan 25 2011

Page 3 of 11

| Sum of PBDEs | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | - | 1000 |
|----------------------------|-------|---|------|---|------|
| Monobromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Dibromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Tribromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Tetrabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Pentabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Hexabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Heptabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Octabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Nonabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |
| Decabromodiphenyl ether ## | mg/kg | With reference to IEC 62321:2008 and performed by GC-MS | n.d. | 5 | |

Note :

- (1) mg/kg = ppm; 0.1wt% = 1000 ppm
- (2) n.d. = not detected
- (3) MDL = Method Detection Limit
- (4) ## = The exemption of DecaBDE in polymeric application according 2005/717/EC was overruled by the European Court of Justice by its decision of 01.04.2008. Subsequently DecaBDE will be included in the sum of PBDE after 01.07.2008
- (5) # = Negative means the absence of CrVI on the tested areas;
Positive means the presence of CrVI on the tested areas. The detected concentration in boiling water extraction solution is equal to or greater than 0.02 mg/kg with 50 cm² sample surface area
- (6) " - " = Not regulated

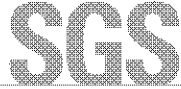
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-docs.html. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS Hong Kong Ltd | 5/F - 8/F & 28/F -29/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong. t (852) 2334 4481-9 f (852) 2764 3126 www.hk.sgs.com

Member of the SGS Group (SGS SA)

Annex 5: Analysis Result of Lead Frame (page 4 of 11)



Test Report

No. 2107721/EC

Date : Jan 25 2011

Page 4 of 11

Test result:

2)

ID for sample 1 : 4120954002

Description for sample 1 : Metal w/ Silvery Plating (Base: Coppery Metal)

PFOS (Perfluorooctane sulfonates)

| <u>Test Item(s)</u> | <u>Unit</u> | <u>Test Method (Reference)</u> | <u>1</u> | <u>MDL</u> |
|------------------------------------|-------------|--|----------|------------|
| Perfluorooctane sulphonates (PFOS) | | | | |
| PFOS – Acid | | With reference to SGS in-house method and performed by HPLC-MS | n.d. | 10 |
| PFOS – Metal Salt | mg/kg | | | |
| PFOS – Amide | | | | |

PFOA (Perfluorooctyl Acid)

| <u>Test Item(s)</u> | <u>Unit</u> | <u>Test Method (Reference)</u> | <u>1</u> | <u>MDL</u> |
|----------------------------|-------------|--|----------|------------|
| Perfluorooctyl Acid (PFOA) | mg/kg | With reference to SGS in-house method and performed by HPLC-MS | n.d. | 10 |

Note :

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

Reference information: Entry 53 of the Regulation (EC) No. 552/2009 amending Annex XVII of REACH Regulation (EC) No. 1907/2006 (Formerly Directive 2006/122/EC).


- (1) Shall not be placed on the market, or used, as a substance or in mixtures in concentrations equal to or higher than 0,005% by mass.
- (2) Shall not be placed on the market in semi-finished products or articles, or parts thereof, if the concentration of PFOS is equal to or higher than 0,1% by mass calculated with reference to the mass of structurally or microstructurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is equal to or higher than 1µg/m² of the coated material.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm, and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-docs.html. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS Hong Kong Ltd | 5/F - 8/F & 28/F -29/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong. t (852) 2334 4481-9 f (852) 2764 3126 www.hk.sgs.com

Member of the SGS Group (SGS SA)

Annex 5: Analysis Result of Lead Frame (page 5 of 11)**Test Report**

No. 2107721/EC

Date : Jan 25 2011

Page 5 of 11

Test result:

3)

ID for sample 1 : 4120954002

Description for sample 1 : Metal w/ Silvery Plating (Base: Coppery Metal)

HBCDD

| Test Item(s) | Unit | Test Method | Results | MDL |
|--------------|-------|--|---------|-----|
| HBCDD | mg/kg | With reference to US EPA3550C:2007, and performed by GC-MS | n.d. | 5 |

Note :

- (1) mg/kg = ppm; 0.1 wt% = 1000 ppm
- (2) n.d. = not detected
- (3) MDL = Method Detection Limit

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm, and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-docs.html. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS Hong Kong Ltd | 5/F - 8/F & 28/F - 29/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong. t (852) 2334 4481-9 f (852) 2764 3126 www.hk.sgs.com

Member of the SGS Group (SGS SA)

Annex 5: Analysis Result of Lead Frame (page 6 of 11)



Test Report

No. 2107721/EC

Date : Jan 25 2011

Page 6 of 11

Test results:

4)

ID for sample 1 : 4120954002

Description for sample 1 : Metal w/ Silvery Plating (Base: Coppery Metal)

Phthalate

| Test item | | Test Method | 1 | DL | Limit |
|------------------------------|--------|--|--------|--------|-------|
| Dibutyl Phthalate | (DBP) | ASTM Method Designation D3421-75, GC-MS | n.d. | 0.003% | - |
| Benzylbutyl Phthalate | (BBP) | ASTM Method Designation D3421-75, GC-MS | n.d. | 0.003% | - |
| Bis-(2-ethylhexyl) Phthalate | (DEHP) | ASTM Method Designation D3421-75, GC-MS | n.d. | 0.003% | - |
| Total (DBP + BBP + DEHP) | | | <0.01% | -- | 0.1% |

Note :

- (1) mg/kg = ppm; 0.1% = 1000 ppm
- (2) DL = Detection Limit
- (3) n.d. = Not Detected (Less than DL)
- (4) < = less than
- (5) % = percentage by weight
- (6) - = Not Regulated

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-docs.html. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS Hong Kong Ltd | 5/F - 8/F & 28/F -29/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong. t (852) 2334 4481-9 f (852) 2764 3126 www.hk.sgs.com

Member of the SGS Group (SGS SA)

Annex 5: Analysis Result of Lead Frame (page 7 of 11)

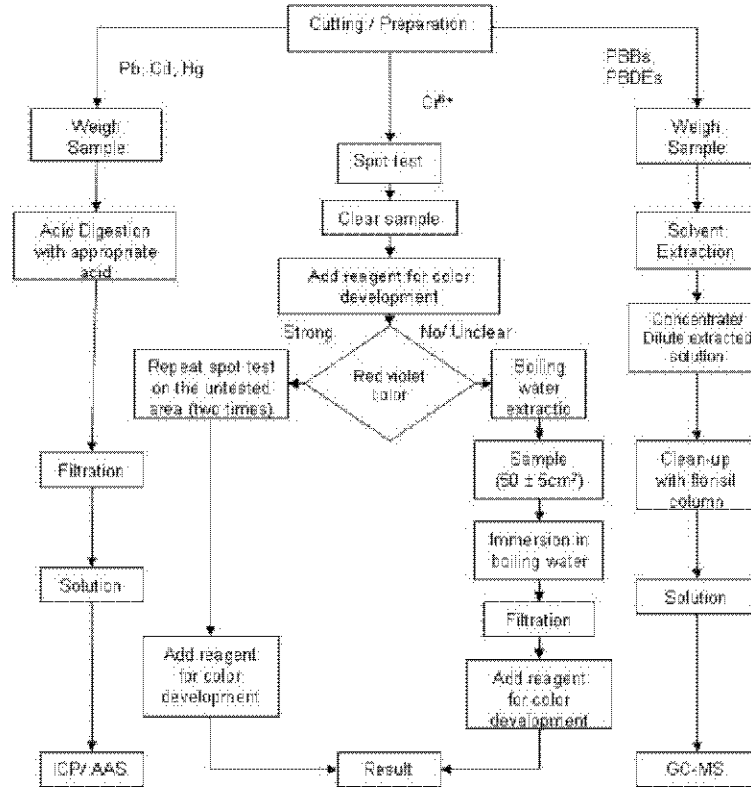


Test Report

No. 2107721/EC

Date : Jan 25 2011

Page 7 of 11



Operator :

Chiu Kan Yuen/ Tang Koon Fung (Acid digestion)
 Chiu Kan Yuen (Dry Ashing)
 Cheng Chi Yuen, Vincent (Hexavalent Chromium)
 Lau Chung Yin, Eric (PBBs and PBDEs)

Section Chief :

Thu Hung Yai, Rodney

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-documents.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS Hong Kong Ltd | 5/F - 8/F & 28/F - 29/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong. t (852) 2334 4481-9 f (852) 2764 3126 www.hk.sgs.com

Member of the SGS Group (SGS SA)

Annex 5: Analysis Result of Lead Frame (page 8 of 11)**SGS****Test Report**

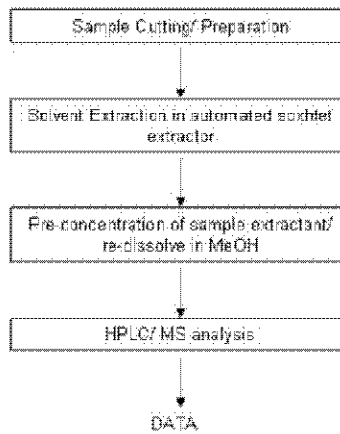
No. 2107721/EC

Date : Jan 25 2011

Page 8 of 11

Flowchart for PFOS/ PFOA measurement

Method: In-House method

Operator: Candy LukChief Supervisor: Yu Ka Lai

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-documents.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS Hong Kong Ltd | 5/F - 8/F & 28/F -29/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong. t (852) 2334 4481-9 f (852) 2764 3126 www.hk.sgs.com

Member of the SGS Group (SGS SA)

Annex 5: Analysis Result of Lead Frame (page 9 of 11)**SGS****Test Report**

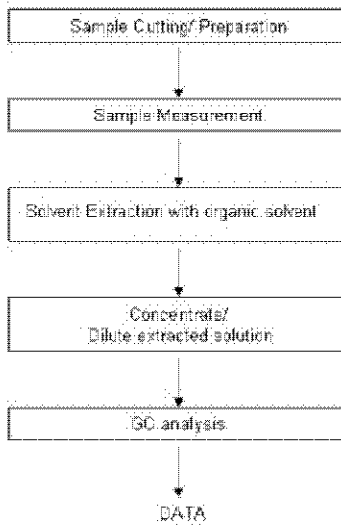
No. 2107721/EC

Date : Jan 25 2011

Page 9 of 11

Flowchart for HBCDD measurement

Method: US EPA3950C/2007

Operator: Zinna Chaw
Chief Supervisor: Dicky Chan

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm, and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-documents.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS Hong Kong Ltd | 5/F - 8/F & 28/F -29/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong. t (852) 2334 4481-9 f (852) 2764 3126 www.hk.sgs.com

Member of the SGS Group (SGS SA)

Annex 5: Analysis Result of Lead Frame (page 10 of 11)**Test Report**

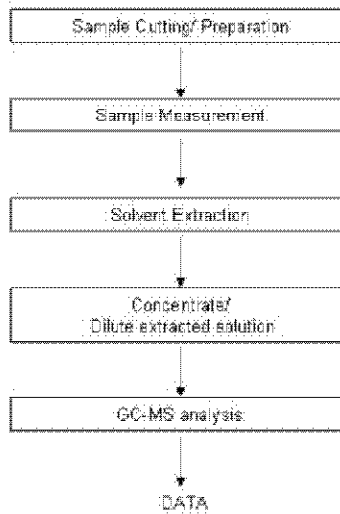
No. 2107721/EC

Date : Jan 25 2011

Page 10 of 11

Flowchart for Phthalates measurement

Method: EN 14372



Tested by : Tang Sze Hon, Gary
Checked by : Chiu Chun Pong, Kevin

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm, and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-documents.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS Hong Kong Ltd | 5/F - 8/F & 28/F -29/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong. t (852) 2334 4481-9 f (852) 2764 3126 www.hk.sgs.com

Member of the SGS Group (SGS SA)

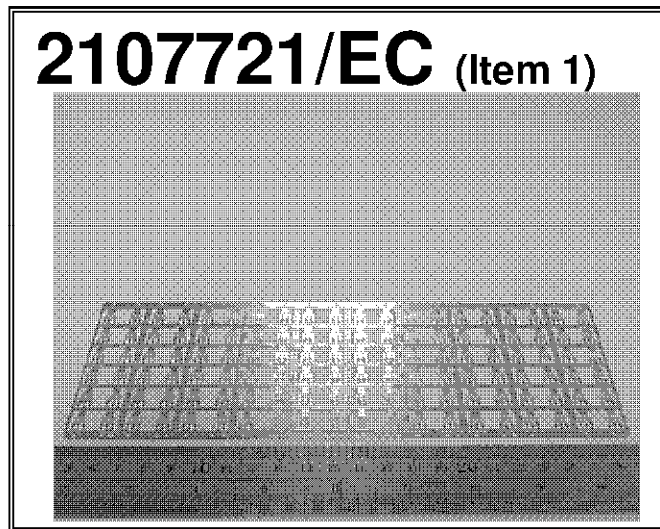
Annex 5: Analysis Result of Lead Frame (page 11 of 11)**SGS****Test Report**

No. 2107721/EC

Date : Jan 25 2011

Page 11 of 11

Sample photo :



SGS authenticate the photo on original report only

*** End of Report ***

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm, and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-docs.html. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS Hong Kong Ltd | 5/F - 8/F & 28/F - 29/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong. t (852) 2334 4481-9 f (852) 2764 3126 www.hk.sgs.com

Member of the SGS Group (SGS SA)

Annex 6: Analysis Result of Silicon Wafer (Page 1 of 7)**SGS**

Validity unknown

For Question
Please Contact with SGS
www.tw.sgs.com**Test Report**



No. : CE/2010/B2372 Date : 2010/11/18 Page : 1 of 7

LITE-ON SEMICONDUCTOR CORP.
28-1, WU SHIN STREET, TA WU LUNG, KEELUNG, TAIWAN

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

Sample Description : WAFER
Style/Item No. : THYRISTOR
Sample Receiving Date : 2010/11/11
Testing Period : 2010/11/11 TO 2010/11/18

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

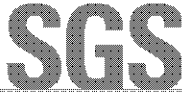


Chenyu Kung, Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory -- Taipei

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試樣品負責。本報告未經本公司書面許可，不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.
台灣檢驗科技股份有限公司 | Chemical-Taipei 33 WuChyuan Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五福路33號 | +886 (0)212299 3279 f + 886 (0)212299 3237 www.sgs.com

Member of the SGS Group (SGS SA)

Annex 6: Analysis Result of Silicon Wafer (Page 2 of 7)



Test Report

No. : CE/2010/B2372 Date : 2010/11/18 Page : 2 of 7

 LITE-ON SEMICONDUCTOR CORP.
 28-1, WU SHIN STREET, TA WU LUNG, KEELUNG, TAIWAN


Test Result(s)

PART NAME No.1 : WAFER

| Test Item (s): | Unit | Method | MDL | Result No.1 |
|---|-------|---|-----|-------------|
| Cadmium (Cd) | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES. | 2 | n.d. |
| Lead (Pb) | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES. | 2 | 19200 |
| Mercury (Hg) | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES. | 2 | n.d. |
| Hexavalent Chromium Cr(VI) by alkaline extraction | mg/kg | With reference to IEC 62321: 2008 and performed by UV-VIS. | 2 | n.d. |
| Sum of PBBs | | | - | n.d. |
| Monobromobiphenyl | | | 5 | n.d. |
| Dibromobiphenyl | | | 5 | n.d. |
| Tribromobiphenyl | | | 5 | n.d. |
| Tetrabromobiphenyl | | | 5 | n.d. |
| Pentabromobiphenyl | | | 5 | n.d. |
| Hexabromobiphenyl | | | 5 | n.d. |
| Heptabromobiphenyl | | | 5 | n.d. |
| Octabromobiphenyl | | | 5 | n.d. |
| Nonabromobiphenyl | | | 5 | n.d. |
| Decabromobiphenyl | | | 5 | n.d. |
| Sum of PBDEs | | | - | n.d. |
| Monobromodiphenyl ether | | | 5 | n.d. |
| Dibromodiphenyl ether | | | 5 | n.d. |
| Tribromodiphenyl ether | | | 5 | n.d. |
| Tetrabromodiphenyl ether | | | 5 | n.d. |
| Pentabromodiphenyl ether | | | 5 | n.d. |
| Hexabromodiphenyl ether | | | 5 | n.d. |
| Heptabromodiphenyl ether | | | 5 | n.d. |
| Octabromodiphenyl ether | | | 5 | n.d. |
| Nonabromodiphenyl ether | | | 5 | n.d. |
| Decabromodiphenyl ether | | | 5 | n.d. |

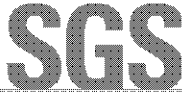
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試樣品負責。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.
 台灣檢驗科技股份有限公司 | Chemical-Taipei 33 WuChyuan Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五權路33號 t + 886 (0)212299 3279 f + 886 (0)212299 3237 www.sgs.com

Member of the SGS Group (SGS SA)

Annex 6: Analysis Result of Silicon Wafer (Page 3 of 7)



Test Report

No. : CE/2010/B2372 Date : 2010/11/18 Page : 3 of 7

LITE-ON SEMICONDUCTOR CORP.
28-1, WU SHIN STREET, TA WU LUNG, KEELUNG, TAIWAN



| Test Item (s): | Unit | Method | MDL | Result |
|---|-------|--|-----|--------|
| | | | | No.1 |
| Halogen | | | | |
| Halogen-Fluorine (F) (CAS No.: 014762-94-8) | mg/kg | With reference to BS EN 14582:2007. Analysis was performed by IC. | 50 | n.d. |
| Halogen-Chlorine (Cl) (CAS No.: 022537-15-1) | | | 50 | n.d. |
| Halogen-Bromine (Br) (CAS No.: 010097-32-2) | | | 50 | n.d. |
| Halogen-Iodine (I) (CAS No.: 014362-44-8) | | | 50 | n.d. |

Note :

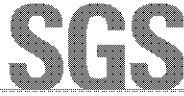
1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試樣品負責。本報告未經本公司書面許可，不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. | Chemical-Taipei 33 WuChyuan Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五權路33號 | +886 (0)22299 3279 f + 886 (0)22299 3237 | www.sgs.com
台灣檢驗科技股份有限公司

Member of the SGS Group (SGS SA)

Annex 6: Analysis Result of Silicon Wafer (Page 4 of 7)



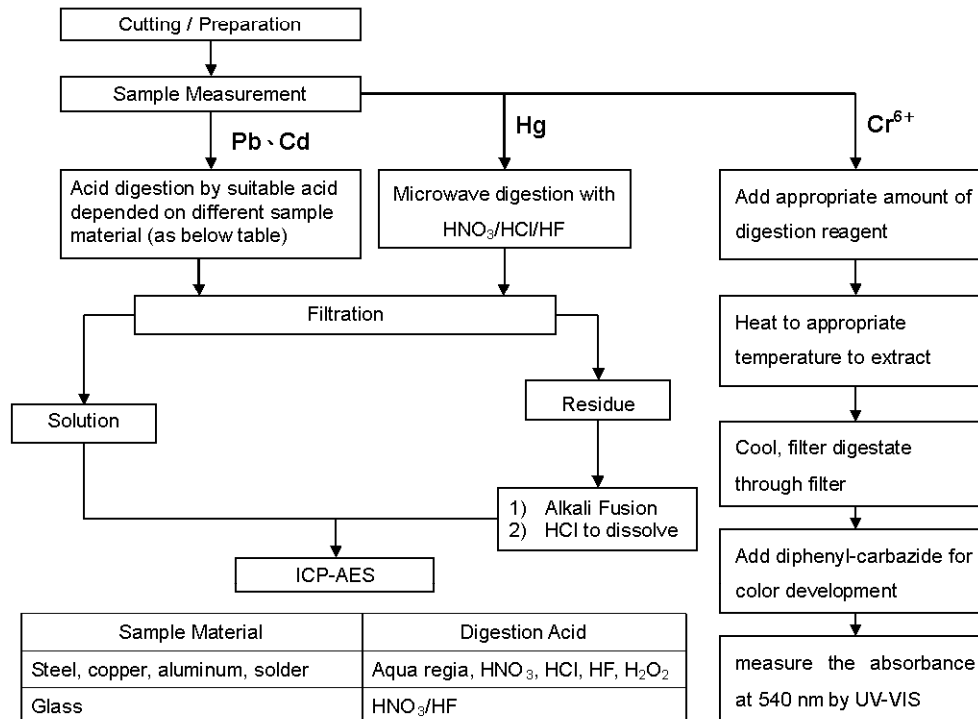
Test Report

No. : CE/2010/B2372 Date : 2010/11/18 Page : 4 of 7

LITE-ON SEMICONDUCTOR CORP.
28-1, WU SHIN STREET, TA WU LUNG, KEELUNG, TAIWAN



- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



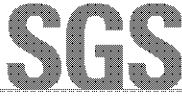
| Sample Material | Digestion Acid |
|------------------------------------|---|
| Steel, copper, aluminum, solder | Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂ |
| Glass | HNO ₃ /HF |
| Gold, platinum, palladium, ceramic | Aqua regia |
| Silver | HNO ₃ |
| Plastic | H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl |
| Others | Any acid to total digestion |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試樣品負責。本報告未經本公司書面許可，不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 | Chemical-Taipei 33 WuChyuan Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五權路33號 | +886 (0)22299 3279 f + 886 (0)22299 3237 www.sgs.com

Member of the SGS Group (SGS SA)

Annex 6: Analysis Result of Silicon Wafer (Page 5 of 7)



Test Report

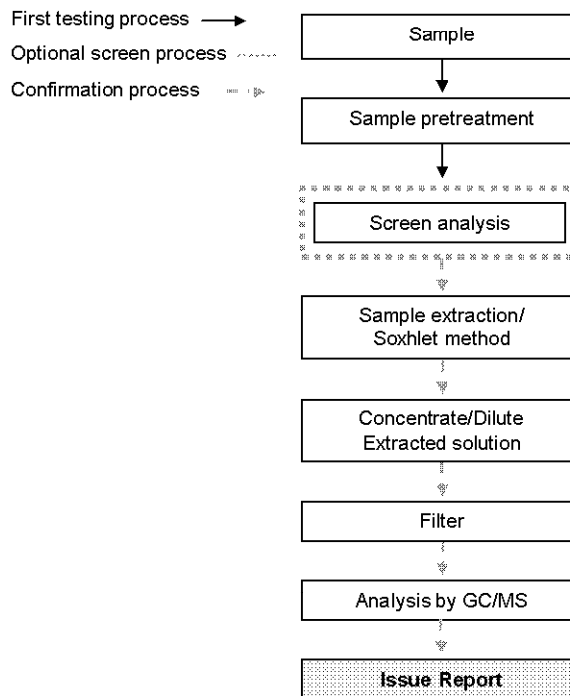
No. : CE/2010/B2372 Date : 2010/11/18 Page : 5 of 7

LITE-ON SEMICONDUCTOR CORP.
28-1, WU SHIN STREET, TA WU LUNG, KEELUNG, TAIWAN



PBB/PBDE analytical FLOW CHART

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



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試樣品負責。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. Chemical-Taipei 33 WuChyuan Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五福路33號 t + 886 (0)212299 3279 f + 886 (0)212299 3237 www.sgs.com
台灣檢驗科技股份有限公司

Member of the SGS Group (SGS SA)

Annex 6: Analysis Result of Silicon Wafer (Page 6 of 7)

SGS

Test Report

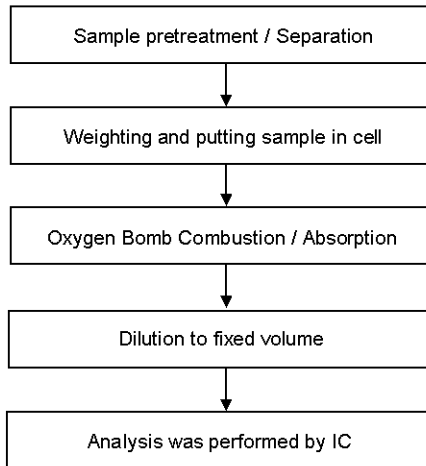
No. : CE/2010/B2372 Date : 2010/11/18 Page : 6 of 7

LITE-ON SEMICONDUCTOR CORP.
28-1, WU SHIN STREET, TA WU LUNG, KEELUNG, TAIWAN



Analytical flow chart of halogen content

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



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試樣品負責。本報告未經本公司書面許可，不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. Chemical-Taipei 33 WuChyuan Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五權路33號 t + 886 (0)22299 3279 f + 886 (0)22299 3237 www.sgs.com
台灣檢驗科技股份有限公司

Member of the SGS Group (SGS SA)

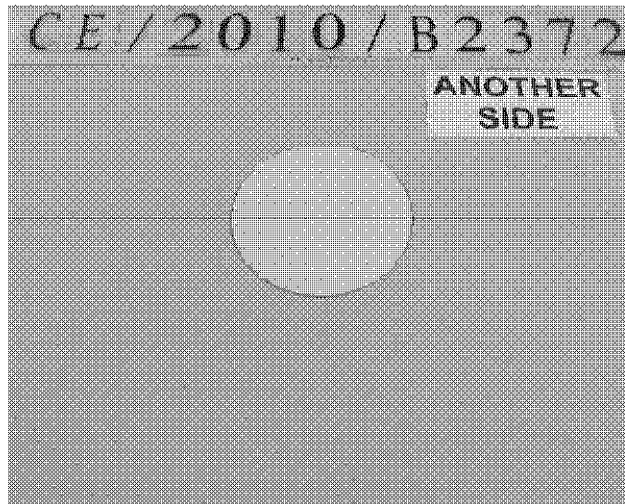
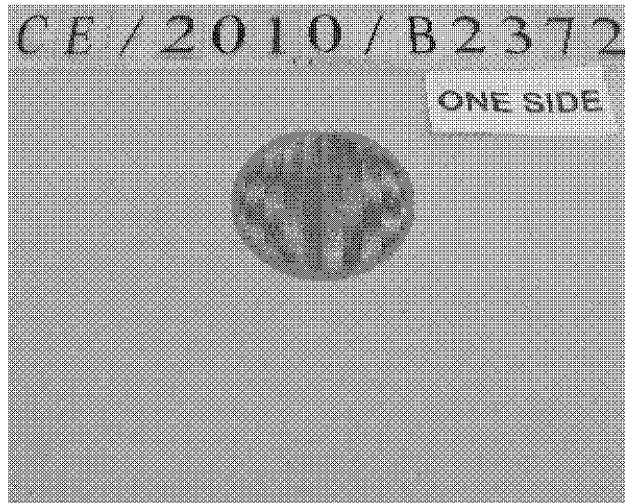
Annex 6: Analysis Result of Silicon Wafer (Page 7 of 7)

SGS

Test Report

No. : CE/2010/B2372 Date : 2010/11/18 Page : 7 of 7

LITE-ON SEMICONDUCTOR CORP.
28-1, WU SHIN STREET, TA WU LUNG, KEELUNG, TAIWAN



**** End of Report ****

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試樣品負責。本報告未經本公司書面許可，不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. Chemical-Taipei 33 WuChyuan Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五權路33號 t + 886 (0)212299 3279 f + 886 (0)212299 3237 www.sgs.com
台灣檢驗科技股份有限公司

Member of the SGS Group (SGS SA)

Annex 7: Applicable RoHS exemptions

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.

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

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-

13.2.2 of the European Union L 37/23

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 (*) amending Directive 76/769/EEC (*) relating to restrictions on the marketing and use of certain dangerous substances and preparations.