



## ICP Test Report Certification Packet

Company name: Littelfuse, Inc.

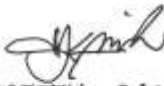
Product Series: 5x20 Fuse

Product #: 215xxxXP

Issue Date: October 11, 2012

It is hereby certified by Littelfuse, Inc. that there is neither RoHS (EU Directive 2002/95/EC, 2011/65/EU)-restricted substance nor such use, for materials to be used for unit parts, for packing/packaging materials, and for additives and the like in the manufacturing processes.

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

Issued by:   
KRISTEEN BACILA

<Global EHS Engineer >

(1) Parts, sub-materials and unit parts

This document covers the 5x20 Fuse RoHS-Compliant series products manufactured by Littelfuse, Inc.

< Raw Materials Used

Please see Table 1

(2) The ICP data on all measurable substances

Please see appropriate pages as identified in Table 1

Remarks :

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

| <b>Total Parts</b> | <b>Raw Material Part Number</b>                                               | <b>Raw Material Description</b>                    | <b>Page(s)</b> |
|--------------------|-------------------------------------------------------------------------------|----------------------------------------------------|----------------|
| 1                  | C910510/ 910-553                                                              | Cap (Copper Shell)<br>Base & Plating               | 3-6            |
| 2                  | 910-556                                                                       | Cap Base<br>Cap Plating                            | 7-10<br>11-14  |
| 3                  | YJ50/YJM (909-449)                                                            | Ceramic Body                                       | 15-25          |
| 4                  | 11-0595 (082xxx)                                                              | Tinned Wire – Cu99.9MSn                            | 26-32          |
| 5                  | 0042xx                                                                        | Tinned Wire – Cu Clad (CuNi44 Sn)                  | 33-39          |
| 6                  | 687xxx-001                                                                    | Silver Plated Wire- Ag-Cu Sn Plated                | 43-45          |
| 7                  | 648901                                                                        | Yarn                                               | 46-54          |
| 8                  | YT-09 (195116)                                                                | Flux                                               | 55-69          |
| 9                  | YTW102 (692539-002)                                                           | Solder                                             | 70-74          |
| 10                 | YTW206 (692529)                                                               | Solder                                             | 75-79          |
| 11                 | C030204, 934-073,<br>934-077, 934-078,<br>934-084,934-085,<br>934-089 C030210 | Overcap – Fuses Copper Shell<br>(base and plating) | 80-83          |
| 12                 | EP608 (087355)                                                                | HMA-Glue (Epoxy Adhesive)                          | 84-91          |
| 13                 | EP608 (087355)                                                                | HMA-Glue (Epoxy Adhesive)                          | 92-95          |
| 14                 | 091250                                                                        | Sand Filler                                        | 96-101         |
| 15                 | 091251                                                                        | Sand Filler                                        | 102-107        |
| 16                 | 091254                                                                        | Sand Filler                                        | 108-116        |
| 17                 | 425900                                                                        | Ink-Orange                                         | 117-131        |
| 18                 | 425901                                                                        | Ink- Red                                           | 132-146        |
| 19                 | 425902                                                                        | Ink-Black                                          | 147-161        |
| 20                 | 425903                                                                        | Ink-Yellow                                         | 162-176        |
| 21                 | 425904                                                                        | Ink-Blue                                           | 177-190        |
| 22                 | 425906                                                                        | Ink-Brown                                          | 191-205        |
| 23                 | 425907                                                                        | Ink-Green                                          | 206-220        |
| 24                 | 425909                                                                        | Ink-Grey                                           | 221-235        |
| 25                 | 425911                                                                        | Ink-Violet                                         | 236-250        |
| 26                 | 425913                                                                        | Pale Blue Ink                                      | 251-265        |
| 27                 | C610(909-532)                                                                 | Ceramic Tube KER610                                | 266-289        |



# TEST REPORT

NO.: A002E11121307-1R02

Date: Dec.15, 2011

Page 1 of 4

**Customer:** SuZhou FuHong Electronic Industrial Co., Ltd.

**Address:** NO. 89 WEI DU ROAD, WANGTING TOWN, XIANGCHENG DISTRICT, SUZHOU, CHINA

**Report on the submitted sample said to be**

**Sample name:** Copper shell

**Model:** /

**Item/Lot No.:** /

**Material:** /

**Description:** /

**Buyer:** /

**Supplier:** /

**Manufacturer:** /

**Sample received date:** Dec.13,2011

**Testing period:** From Dec.13,2011 to Dec.15,2011

## Testing Requested

As specified by client, to determine the Lead, Cadmium, Mercury & Hexavalent Chromium content in the submitted sample in accordance with Directive 2002/95/EC (RoHS).

## Testing method:

| Testing Item     | Pretreatment method        | Measuring instrument | MQL        |
|------------------|----------------------------|----------------------|------------|
| Lead (Pb)        | IEC 62321: 2008, section 9 | ICP-OES              | 2mg/kg     |
| Cadmium (Cd)     | IEC 62321: 2008, section 9 | ICP-OES              | 2 mg/kg    |
| Mercury (Hg)     | IEC 62321: 2008, section 7 | ICP-OES              | 2 mg/kg    |
| Chromium (Cr VI) | IEC 62321: 2008, Annex B   | UV-VIS               | 0.02mg/kg* |

## Note:

-\* 0.02 mg/kg refers to the MQL of sample extraction liquid.

## Conclusion:

-When tested as specified the submitted sample complied with the requirements of commission Decision of 18 Aug 2005 amending Directive 2002/95/EC notified under document 2005/618/EC.

\*\*\*\*\*FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)\*\*\*\*\*

Project Leader  
(Engineer)

*Maggie*

Approved by  
(Lab manager)

*Wickay*

Inspected by  
(Technical manager)

*Wei kin*

SHENZHEN AOV TESTING TECHNOLOGY CO.,LTD.KUNSHAN BRANCH

No.8,Minguan Road North,Zhoushi,Kunshan,Jiangsu,China

Fax : 86-512-5510 8808 Http: //www.aovt.com

(Attention is drawn to the terms and conditions printed overleaf)



Hotline

86-512-5510 8000

# TEST REPORT

NO.: A002E11121307-1R02

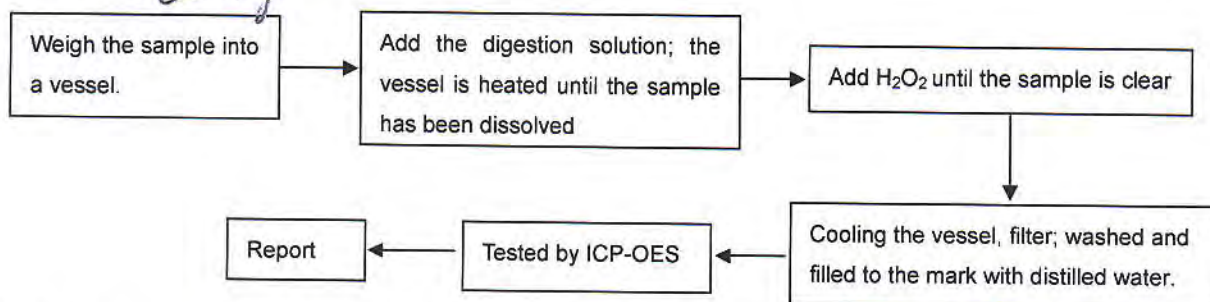
Date: Dec.15, 2011

Page 2 of 4

## Test Flow:

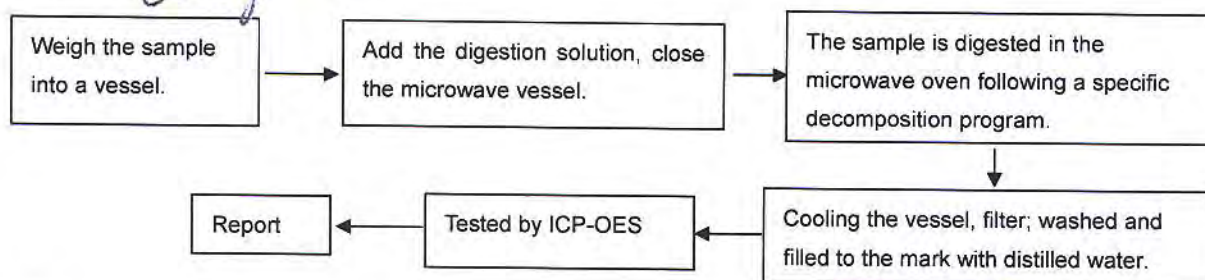
1. To Determine Lead, Cadmium Content: (Metal substrate)

Tested by: *Condy*



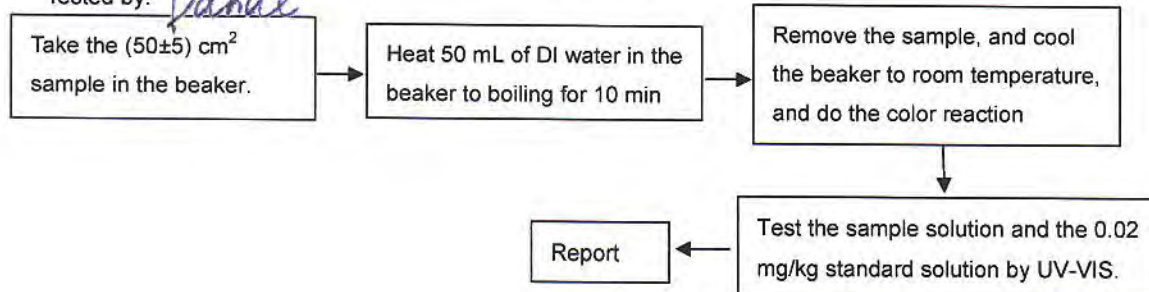
2. To Determine Mercury Content: (Metal substrate)

Tested by: *Condy*



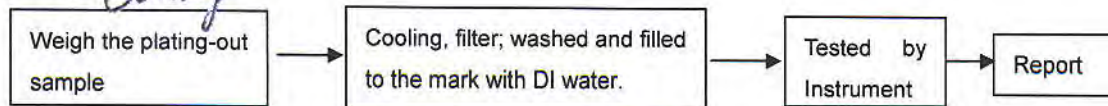
3. To Determine Hexavalent Chromium Content (boiling- water- extraction): (Metal substrate)

Tested by: *Danae*



4. To Determine Lead, Cadmium and Mercury Content: (Plating)

Tested by: *Condy*



# TEST REPORT

NO.: A002E11121307-1R02

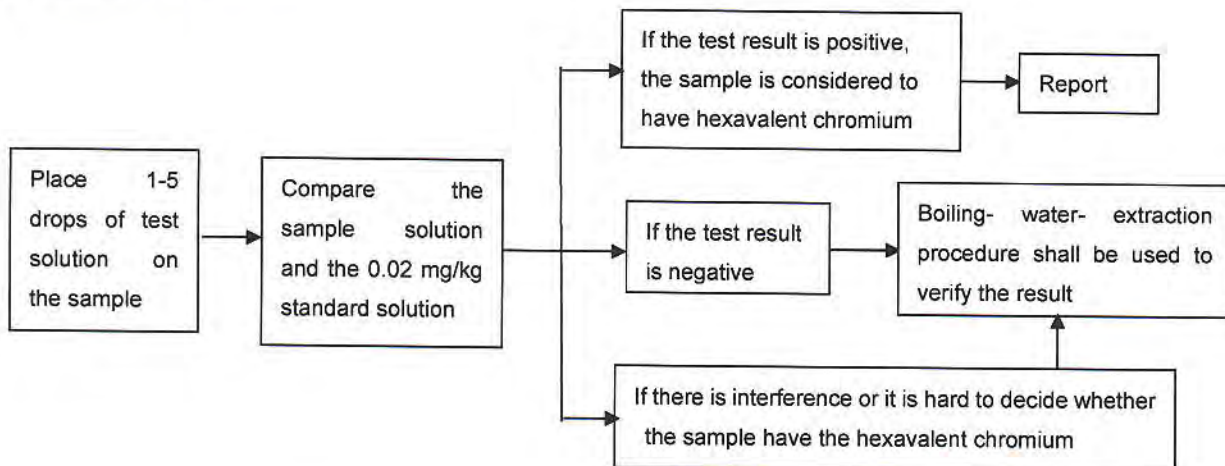
Date: Dec.15, 2011

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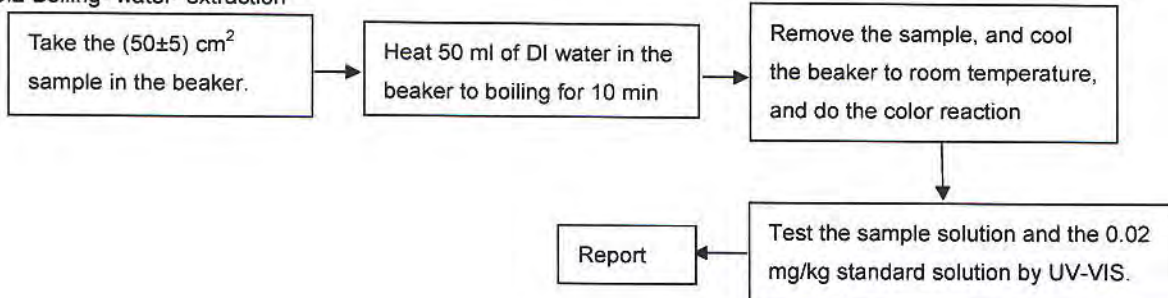
5. To Determine Hexavalent Chromium Content in colorless and colored chromate coating on metals: (Plating)

Tested by: *Danale*

5.1 Spot-test



5.2 Boiling- water- extraction



## Test Results:

| Item            | Unit  | RoHS Limit | Result    |          |
|-----------------|-------|------------|-----------|----------|
|                 |       |            | Substrate | Plating* |
| Lead (Pb)       | mg/kg | 1000       | N.D.      | N.D.     |
| Cadmium (Cd)    | mg/kg | 100        | N.D.      | N.D.     |
| Mercury (Hg)    | mg/kg | 1000       | N.D.      | N.D.     |
| Chromium (CrVI) | mg/kg | 1000       | Negative  | Negative |

# TEST REPORT

NO.: A002E11121307-1R02

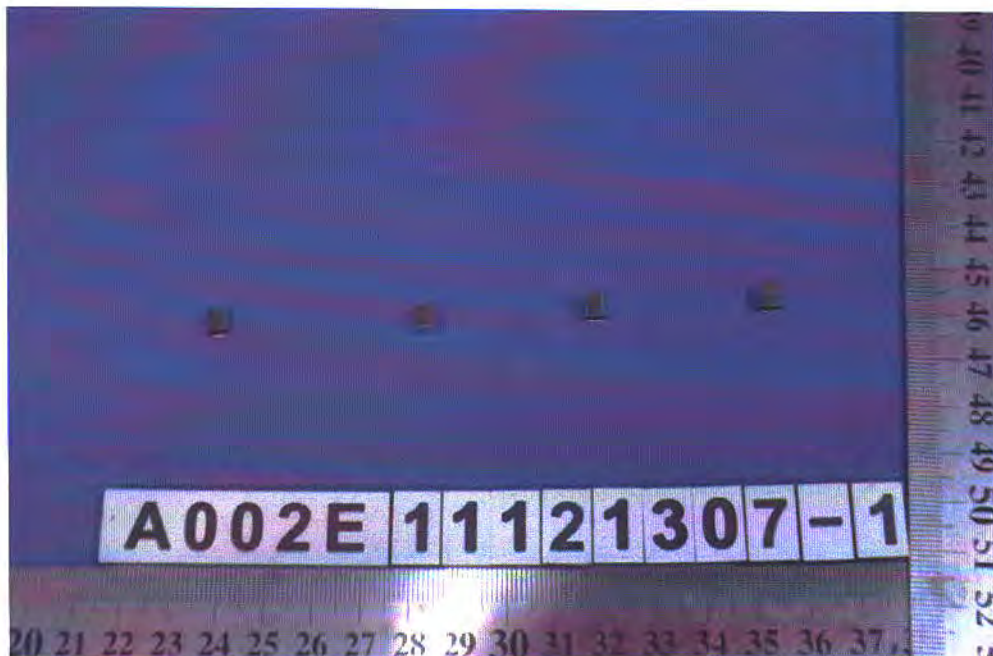
Date: Dec.15, 2011

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## Note:

- The new RoHS directive 2011/65/EU, on Jul. 21, 2011 come into force, on Jan. 03, 2013 the formal implementation, Directive 2002/95/EC shall be repealed simultaneously.
- Specimens, which requested to determine Lead, Cadmium and Mercury Content, have been dissolved completely.
- mg/kg=ppm
- N.D.=not detected(<MQL)
- MQL=Method Quantitation Limit
- Negative=Absence of Cr (VI);  
Positive=Presence of Cr (VI);  
Uncertain= can not verify whether the sample have Hexavalent Chromium by spot-test.  
(The tested sample should be further verified by boiling-water-extraction method if the spot test result is uncertain or negative.)
- \*The test is based on the following assumption: The sample plating is a single layer and each part is uniform. The test result maybe cannot stand for the physical truth of sample plating.
- Photo is included

## Photograph of Sample



Copper shell

\*\*\*End of Report\*\*\*



## Test Report

No. SHAEC1119466001

Date: 13 Dec 2011

Page 1 of 4

DONGGUAN CITY XINHAI METAL PRODUCTS CO.,LTD

1<sup>ST</sup> WEIMING ROAD HENGZENG AV.XINAN COMMUNITY CHANGAN TOWN DONGGUAN CITY  
GUANGDONG PROVINCE

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

SGS Job No. : SP11-036355 - SH

Composition : H65

Date of Sample Received : 02 Dec 2011

Testing Period : 02 Dec 2011 - 06 Dec 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 of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of  
SGS-CSTC Ltd.

Fan Jingjie, JJ  
Approved Signatory

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# Test Report

No. SHAEC1119466001

Date: 13 Dec 2011

Page 2 of 4

Test Results :

## Test Part Description :

| Specimen No. | SGS Sample ID    | Description            |
|--------------|------------------|------------------------|
| 1            | SHA11-194660.001 | Silver metal base part |

Remarks :

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

## RoHS Directive 2011/65/EU

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.

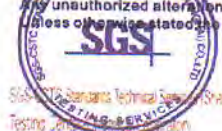
| Test Item(s)                 | Limit | Unit  | MDL | 001      |
|------------------------------|-------|-------|-----|----------|
| Cadmium (Cd)                 | 100   | mg/kg | 2   | ND       |
| Lead (Pb)                    | 1,000 | mg/kg | 2   | 6        |
| Mercury (Hg)                 | 1,000 | mg/kg | 2   | ND       |
| Hexavalent Chromium (Cr(VI)) | -     | -     | ◇   | Negative |

Notes :

- (1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II
- (2) ◇ = a. Positive means the presence of CrVI on the tested areas;  
b. Negative means the absence of CrVI on the tested areas

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.

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Testing Services Division

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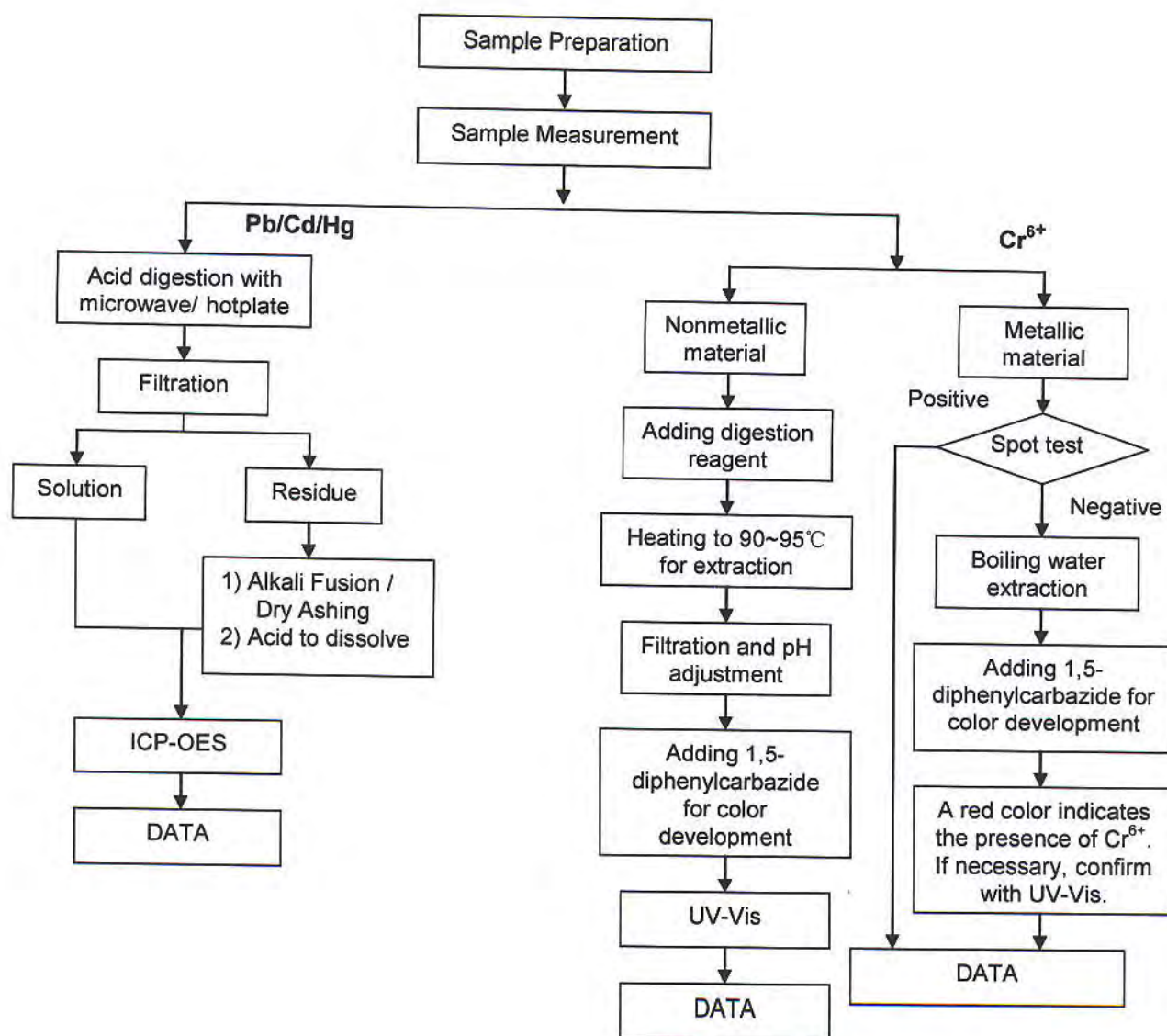
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## ATTACHMENTS

### RoHS Testing Flow Chart

- 1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)



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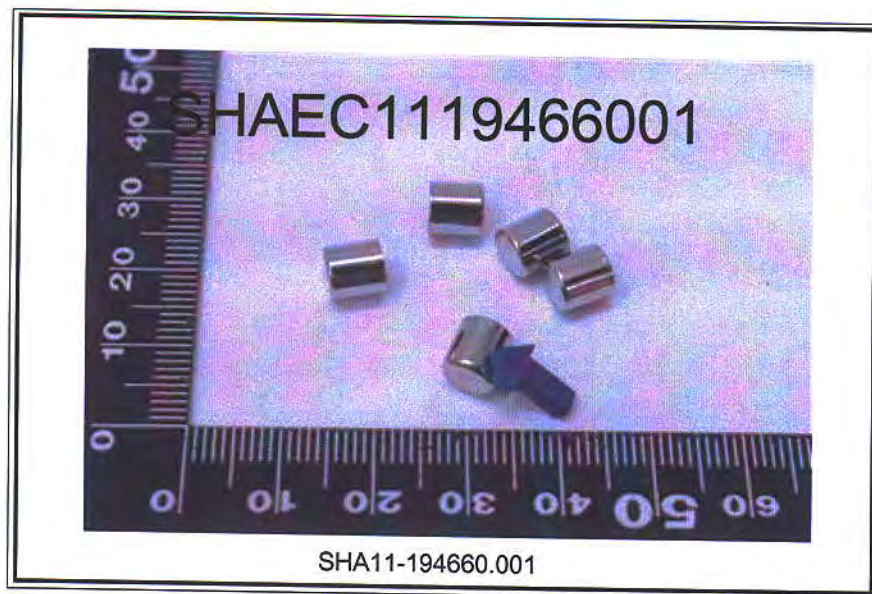
## Test Report

No. SHAEC1119466001

Date: 13 Dec 2011

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Sample photo:



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## Test Report

No. SHAEC1119466002

Date: 13 Dec 2011

Page 1 of 4

DONGGUAN CITY XINHAI METAL PRODUCTS CO.,LTD

1<sup>ST</sup> WEIMING ROAD HENGZENG AV.XINAN COMMUNITY CHANGAN TOWN DONGGUAN CITY  
GUANGDONG PROVINCE

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

SGS Job No. : SP11-036355 - SH  
Composition : Ni  
Date of Sample Received : 02 Dec 2011  
Testing Period : 02 Dec 2011 - 06 Dec 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 selected part of submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits in RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of  
SGS-CSTC Ltd.



Fan Jingjie, JJ  
Approved Signatory

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Testing Center

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## Test Report

No. SHAEC1119466002

Date: 13 Dec 2011

Page 2 of 4

Test Results :

### Test Part Description :

| Specimen No. | SGS Sample ID    | Description               |
|--------------|------------------|---------------------------|
| 1            | SHA11-194660.002 | Silver metal plating part |

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 : IEC 62321:2008 application of modified digestion by surface etching for Cadmium, Lead and Mercury, analysis by ICP-OES  
With reference to IEC 62321:2008 for Hexavalent Chromium by spot test / Colorimetric Method.

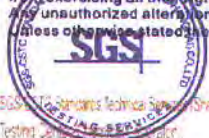
| Test Item(s)               | Limit | Unit  | MDL | 002      |
|----------------------------|-------|-------|-----|----------|
| Lead (Pb)                  | 1,000 | mg/kg | 10  | ND       |
| Cadmium (Cd)               | 100   | mg/kg | 10  | ND       |
| Mercury (Hg)               | 1,000 | mg/kg | 10  | ND       |
| Hexavalent Chromium (CrVI) | -     | -     | ◇   | Negative |

Notes :

- (1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II
- (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 cm<sup>2</sup> sample surface area.

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Testing Center (Shanghai Branch)

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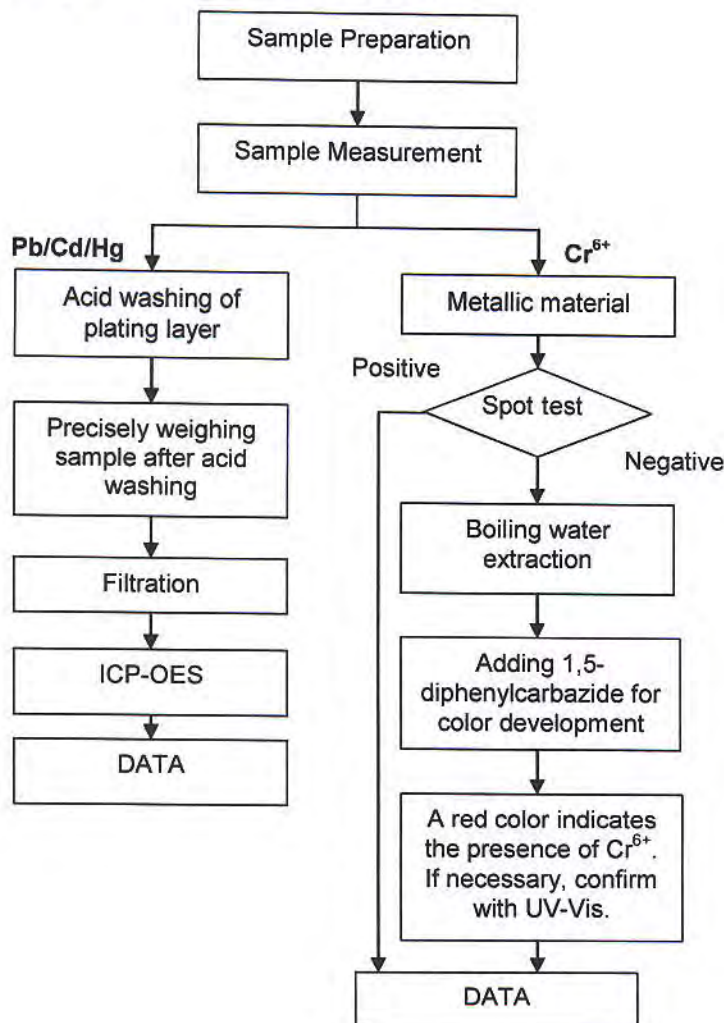
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## ATTACHMENTS

### Plating Pb/Cd/Hg/Cr<sup>6+</sup> Testing Flow Chart

- 1) Name of the person who made testing: Yoyo Wang/Allen Xiao
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu



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## Test Report

No. SHAEC1119466002

Date: 13 Dec 2011

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Sample photo:



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\*\*\* End of Report \*\*\*

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## 測試報告

## Test Report

號碼(No.): CE/2012/37057 日期(Date): 2012/04/05 頁數(Page): 1 of 11

永晉電瓷股份有限公司 / YUEN JINN ELECTRICAL CERAMIC CO., LTD.

(永晉電瓷(蘇州)有限公司 / YUEN JINN ELECTRICAL CERAMIC (SUZHOU) CO., LTD.)

新北市樹林區豐林街40號 / NO. 40, FENG LIN ST., SHU LIN DIST., NEW TAIPEI CITY, TAIWAN

(江蘇省吳江市松陵鎮江陵西路 / JIANG LING WEST ROAD SONG LING TOWN WU JIANG CITY JIANG SU CHINA P. R. C.)



以下測試樣品係由客戶送樣，且由客戶聲稱並經客戶確認如下 (The following samples was/were submitted and identified by/on behalf of the client as):

樣品名稱(Sample Description) : CERAMIC BASE (陶瓷體)  
 樣品型號(Style/Item No.) : YJ5B/YJM  
 批號(Batch No.) : A28  
 收件日期(Sample Receiving Date) : 2012/3/28  
 測試期間(Testing Period) : 2012/3/28 TO 2012/04/05

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).

結論(Conclusion) : 根據客戶所提供的樣品，其鎘、鉛、汞、六價鉻、多溴聯苯及多溴聯苯醚的測試結果符合 RoHS指令2002/95/EC的更新指令2011/65/EU之要求 (Based on the performed tests on submitted samples, the test results of Cadmium, Lead, Mercury, Hexavalent Chromium Cr(VI), PBBs and PBDEs comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.)

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

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### 測試結果(Test Results)

測試部位(PART NAME)No.1 : 白色陶瓷 (WHITE CERAMIC)

| 測試項目<br>(Test Items)                                               | 單位<br>(Unit) | 測試方法<br>(Method)                                                                                                                               | 方法偵測<br>極限值<br>(MDL) | 結果<br>(Result)<br>No.1 | 法規<br>限值<br>(Limit) |
|--------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------------|---------------------|
| 鎘 / Cadmium (Cd)                                                   | mg/kg        | 參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測。 / With reference to IEC 62321: 2008 and performed by ICP-AES.                                           | 2                    | n.d.                   | 100                 |
| 鉛 / Lead (Pb)                                                      | mg/kg        |                                                                                                                                                | 2                    | 16                     | 1000                |
| 汞 / Mercury (Hg)                                                   | mg/kg        |                                                                                                                                                | 2                    | n.d.                   | 1000                |
| 六價鉻 / Hexavalent Chromium Cr(VI)                                   | mg/kg        | 參考IEC 62321: 2008方法, 以UV-VIS檢測。 / With reference to IEC 62321: 2008 and performed by UV-VIS.                                                   | 2                    | n.d.                   | 1000                |
| 六溴環十二烷 / Hexabromocyclododecane (HBCDD) (CAS No.: 25637-99-4)      | mg/kg        | 參考US EPA 3540C方法, 以氣相層析/質譜儀檢測。 / With reference to US EPA 3540C method. Analysis was performed by GC/MS.                                       | 5                    | n.d.                   | -                   |
| 全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide) | mg/kg        | 參考US EPA 3540C: 1996方法, 以液相層析/質譜儀檢測全氟辛烷磺酸含量。 / With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS.  | 10                   | n.d.                   | -                   |
| 全氟辛酸(鈹) / PFOA (CAS No.: 335-67-1)                                 | mg/kg        | 參考US EPA 3540C: 1996方法, 以液相層析/質譜儀檢測全氟辛酸(鈹)含量。 / With reference to US EPA 3540C: 1996 method for PFOA Content. Analysis was performed by LC/MS. | 10                   | n.d.                   | -                   |
| 鄰苯二甲酸甲苯基丁酯 / BBP (Benzyl butyl phthalate) (CAS No.: 88-68-7)       | %            | 參考EN 14372, 以氣相層析/質譜儀檢測之。 / With reference to EN 14372. Analysis was performed by GC/MS.                                                       | 0.003                | n.d.                   | -                   |

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## 測試報告

## Test Report

號碼(No.): CE/2012/37957 日期(Date): 2012/04/05 頁數(Page): 3 of 11

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| 測試項目<br>(Test Items)                                                     | 單位<br>(Unit) | 測試方法<br>(Method)                                                                                     | 方法偵測<br>極限值<br>(MDL) | 結果<br>(Result) | 法規<br>限值<br>(Limit) |
|--------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------|----------------------|----------------|---------------------|
|                                                                          |              |                                                                                                      |                      | No.1           |                     |
| 鄰苯二甲酸二(2-乙基己基)酯 / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No.: 117-81-7) | %            | 參考EN 14372, 以氣相層析/質譜儀檢測之。<br>/ With reference to EN 14372. Analysis was performed by GC/MS.          | 0.003                | n.d.           | -                   |
| 鄰苯二甲酸二異癸酯 / DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0)           | %            | 參考EN 14372, 以氣相層析/質譜儀檢測之。<br>/ With reference to EN 14372. Analysis was performed by GC/MS.          | 0.01                 | n.d.           | -                   |
| 鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0)           | %            | 參考EN 14372, 以氣相層析/質譜儀檢測之。<br>/ With reference to EN 14372. Analysis was performed by GC/MS.          | 0.01                 | n.d.           | -                   |
| 鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)              | %            | 參考EN 14372, 以氣相層析/質譜儀檢測之。<br>/ With reference to EN 14372. Analysis was performed by GC/MS.          | 0.003                | n.d.           | -                   |
| 鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)                    | %            | 參考EN 14372, 以氣相層析/質譜儀檢測之。<br>/ With reference to EN 14372. Analysis was performed by GC/MS.          | 0.003                | n.d.           | -                   |
| 鹵素 / Halogen                                                             |              |                                                                                                      |                      |                |                     |
| 鹵素(氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)                       | mg/kg        | 參考BS EN 14582:2007, 以離子層析儀分析。<br>/ With reference to BS EN 14582:2007. Analysis was performed by IC. | 50                   | n.d.           | -                   |
| 鹵素(氯) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)                      | mg/kg        |                                                                                                      | 50                   | n.d.           | -                   |
| 鹵素(溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)                       | mg/kg        |                                                                                                      | 50                   | n.d.           | -                   |
| 鹵素(碘) / Halogen-Iodine (I) (CAS No.: 14352-44-8)                         | mg/kg        |                                                                                                      | 50                   | n.d.           | -                   |

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## 測試報告

## Test Report

號碼(No.): CE/2012/37057 日期(Date): 2012/04/05 頁數(Page): 4 of 11

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| 測試項目<br>(Test Items)             | 單位<br>(Unit) | 測試方法<br>(Method)                                                                                      | 方法偵測<br>極限值<br>(MDL) | 結果<br>(Result)<br>No. 1 | 法規<br>限值<br>(Limit) |
|----------------------------------|--------------|-------------------------------------------------------------------------------------------------------|----------------------|-------------------------|---------------------|
|                                  |              |                                                                                                       |                      |                         |                     |
| 多溴聯苯總和 / Sum of PBBs             | mg/kg        | 參考IEC 62321: 2008方法, 以氣相層析儀/<br>質譜儀檢測。 / With reference to IEC<br>62321: 2008 and performed by GC/MS. | -                    | n.d.                    | 1000                |
| 一溴聯苯 / Monobromobiphenyl         | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 二溴聯苯 / Dibromobiphenyl           | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 三溴聯苯 / Tribromobiphenyl          | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 四溴聯苯 / Tetrabromobiphenyl        | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 五溴聯苯 / Pentabromobiphenyl        | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 六溴聯苯 / Hexabromobiphenyl         | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 七溴聯苯 / Heptabromobiphenyl        | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 八溴聯苯 / Octabromobiphenyl         | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 九溴聯苯 / Nonabromobiphenyl         | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 十溴聯苯 / Decabromobiphenyl         | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 多溴聯苯醚總和 / Sum of PBDEs           | mg/kg        |                                                                                                       | -                    | n.d.                    | 1000                |
| 一溴聯苯醚 / Monobromodiphenyl ether  | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 二溴聯苯醚 / Dibromodiphenyl ether    | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 三溴聯苯醚 / Tribromodiphenyl ether   | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 四溴聯苯醚 / Tetrabromodiphenyl ether | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 五溴聯苯醚 / Pentabromodiphenyl ether | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 六溴聯苯醚 / Hexabromodiphenyl ether  | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 七溴聯苯醚 / Heptabromodiphenyl ether | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 八溴聯苯醚 / Octabromodiphenyl ether  | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 九溴聯苯醚 / Nonabromodiphenyl ether  | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |
| 十溴聯苯醚 / Decabromodiphenyl ether  | mg/kg        |                                                                                                       | 5                    | n.d.                    | -                   |

### 備註(Note):

1. mg/kg = ppm; 0.1wt% = 1000ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. "-" = Not Regulated (無規格值)

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## Test Report

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PFOS參考資訊(Reference Information): 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm), 在半成品、成品或零部件中不得超過0.1%(1000ppm), 在紡織品或塗層材料中不得超過1µg/m<sup>2</sup>。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1µg/m<sup>2</sup>.)

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## 測試報告

## Test Report

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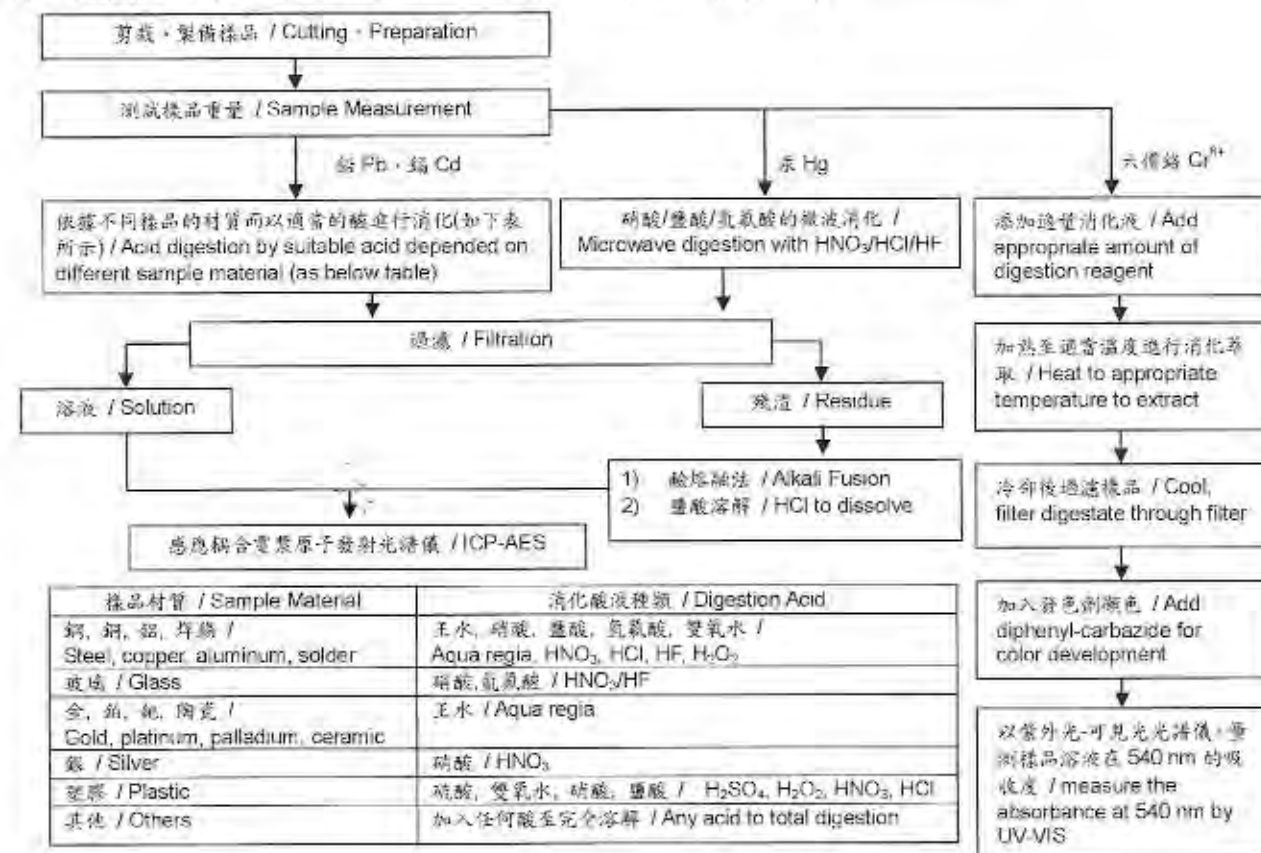
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張修瑋 / Name of the person in charge of measurement: Troy Chang



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## 測試報告

## Test Report

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(永晉電瓷(蘇州)有限公司 / YUEN JINN ELECTRICAL CERAMIC (SUZHOU) CO., LTD.)

新北市樹林區豐林街40號 / NO. 40, FENG LIN ST., SHU LIN DIST., NEW TAIPEI CITY, TAIWAN

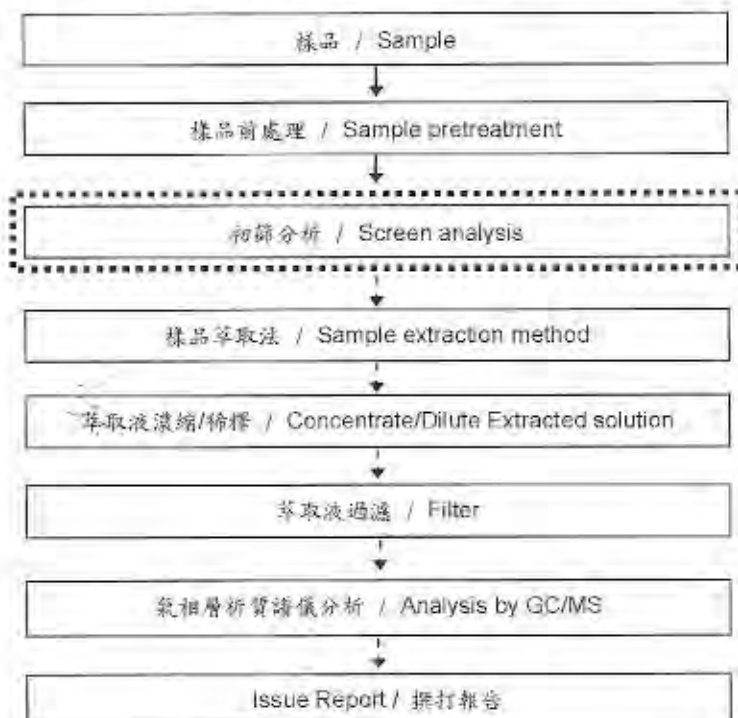
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### 分析流程圖 / Analytical flow chart

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人: 張啓興 / Name of the person in charge of measurement: Troy Chang
- 【測試項目(Test Items): 多溴聯苯/多溴聯苯醚、四溴雙酚-A雙 / PBB/PBDE, TBBP-A-bis】

固定測試程序 / First testing process → 選擇性篩檢程序 / Optional screen process ■■■■ 確認程序 / Confirmation process →



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## 測試報告

## Test Report

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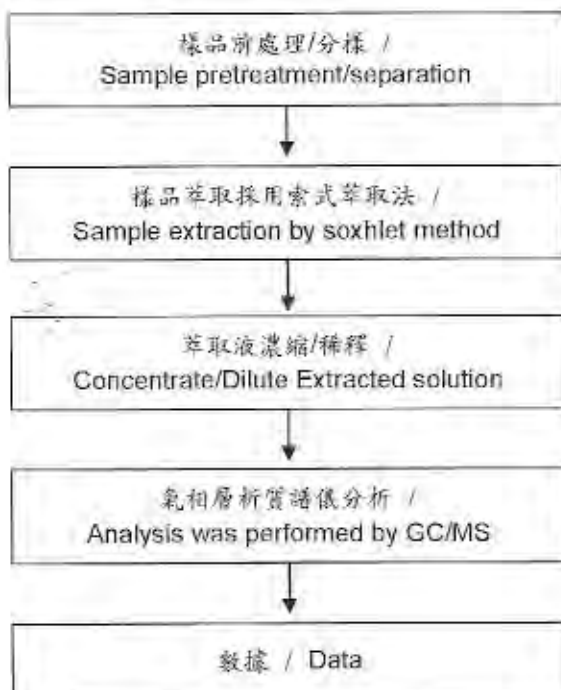


### 索式萃取分析流程圖 /

### Analytical flow chart of Soxhlet extraction (GC/MS) procedure

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang

【測試項目：可塑劑、苯並三唑類化合物、六溴環十二烷、壬酚、單甲基二溴二苯基甲烷、有機磷化合物 / Test Items: Phthalate, Benzotriazole, HBCDD, NP, DBBT, Organic phosphorus compounds】



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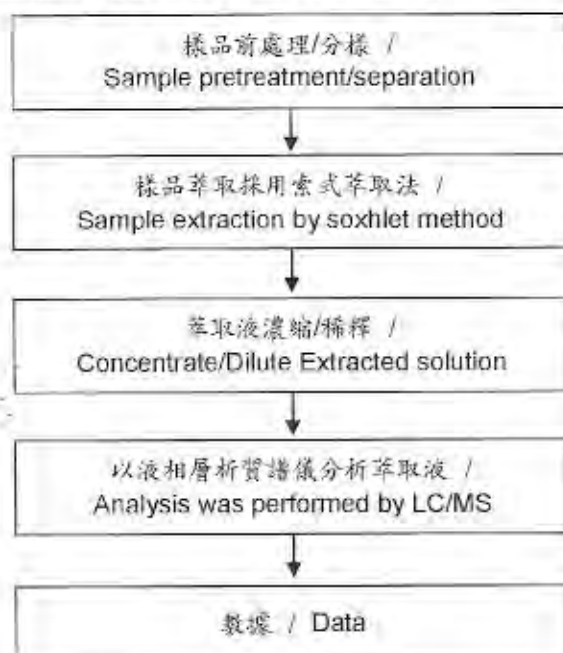
### 索式萃取分析流程圖 /

### Analytical flow chart of Soxhlet extraction (LC/MS) procedure

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人: 張啓興 / Name of the person in charge of measurement: Troy Chang

【測試項目: 全氟辛烷磺酸/全氟辛酸(銨)、苯並三唑類化合物 /

Test Items: PFOS/PFOA, Benzotriazole】



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## Test Report

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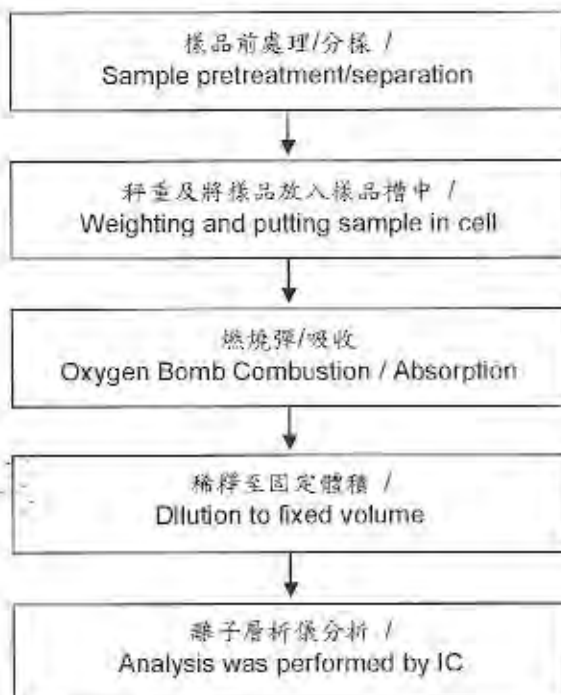
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### 鹵素分析流程圖 / Analytical flow chart of halogen content

- 1) 測試人員: 陳思臻 / Name of the person who made measurement: Rita Chen
- 2) 測試負責人: 張啓興 / Name of the person in charge of measurement: Troy Chang



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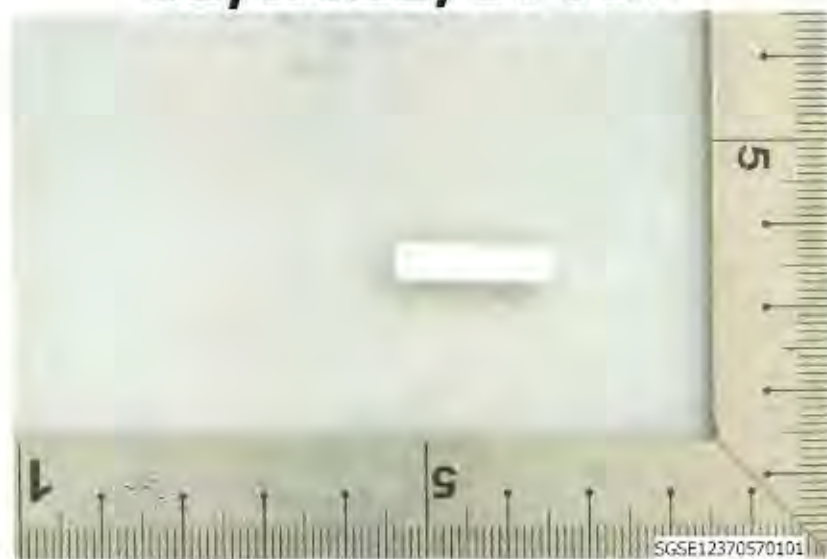
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\* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。\*

(The tested sample / part is marked by an arrow if it's shown on the photo.)

### CE/2012/37057



\*\* 報告結尾 (End of Report) \*\*

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POLYFIL AG  
OBERALLMENDSTRASSE 20A, CH-6300 ZUG / SWITZERLAND

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

Sample Description : Cu99.9MSn  
Buyer/Order No. : 11-0595  
Sample Receiving Date : 2011/11/25  
Testing Period : 2011/11/25 TO 2011/12/01

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

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Chemical-Taipei 33 WuChyuan Road, Wuku Industrial Zone, New Taipei City, Taiwan / 新北市五股區 五股路33號 + 886 (02) 2299 3279 f + 886 (02) 2299 3237 [www.sgs.com](http://www.sgs.com)

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### Test Result(s)

PART NAME No.1 : SILVER COLORED METAL WIRE (INCLUDING THE PLATING LAYER)

| Test Item(s)               | Unit  | Method                                                                               | MDL | Result<br>No.1 |
|----------------------------|-------|--------------------------------------------------------------------------------------|-----|----------------|
| Cadmium (Cd)               | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES.                          | 2   | n.d.           |
| Lead (Pb)                  | mg/kg |                                                                                      | 2   | 24             |
| Mercury (Hg)               | mg/kg |                                                                                      | 2   | n.d.           |
| Hexavalent Chromium Cr(VI) | **    | With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.# | #   | Negative       |
| <b>Sum of PBBs</b>         | mg/kg | With reference to IEC 62321: 2008 and performed by GC/MS.                            | -   | 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.           |
| <b>Sum of PBDEs</b>        |       |                                                                                      | -   | 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.           |

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| Test Item(s)                                   | Unit  | Method                                                               | MDL | Result<br>No.1 |
|------------------------------------------------|-------|----------------------------------------------------------------------|-----|----------------|
| <b>Halogen</b>                                 |       |                                                                      |     |                |
| Halogen-Fluorine (F)<br>(CAS No.: 14762-94-8)  | mg/kg | With reference to BS EN 14582:2007.<br>Analysis was performed by IC. | 50  | n.d.           |
| Halogen-Chlorine (Cl)<br>(CAS No.: 22537-15-1) |       |                                                                      | 50  | n.d.           |
| Halogen-Bromine (Br)<br>(CAS No.: 10097-32-2)  |       |                                                                      | 50  | n.d.           |
| Halogen-Iodine (I)<br>(CAS No.: 14362-44-8)    |       |                                                                      | 50  | n.d.           |

### Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. \*\* = Qualitative analysis (No Unit)
6. # = a. Positive means the presence of CrVI on the tested areas  
b. Negative means the absence of CrVI on the tested areas  
The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> tested areas.
7. The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value.

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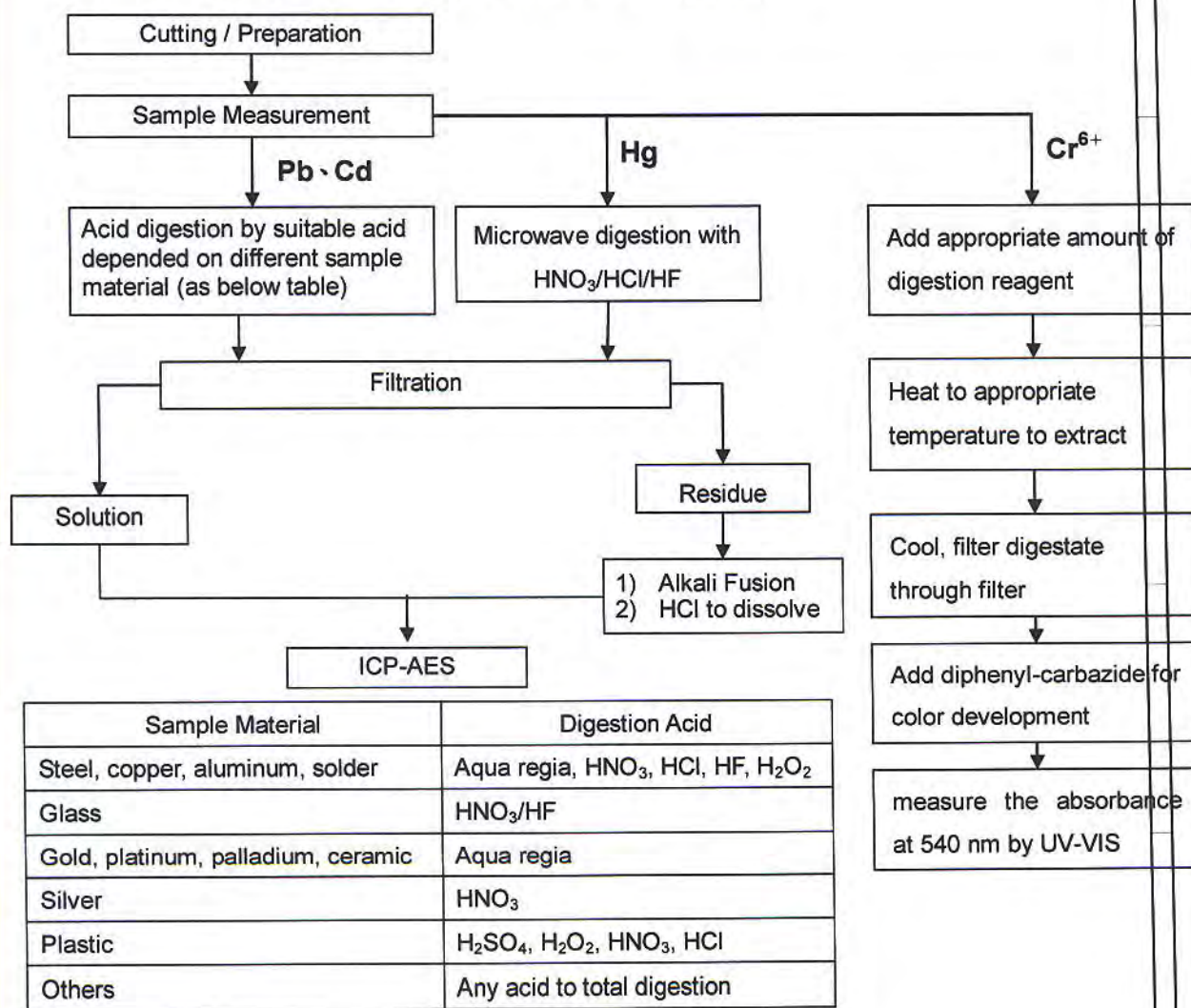
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OBERALLMENDSTRASSE 20A, CH-6300 ZUG / SWITZERLAND

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr<sup>6+</sup> test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



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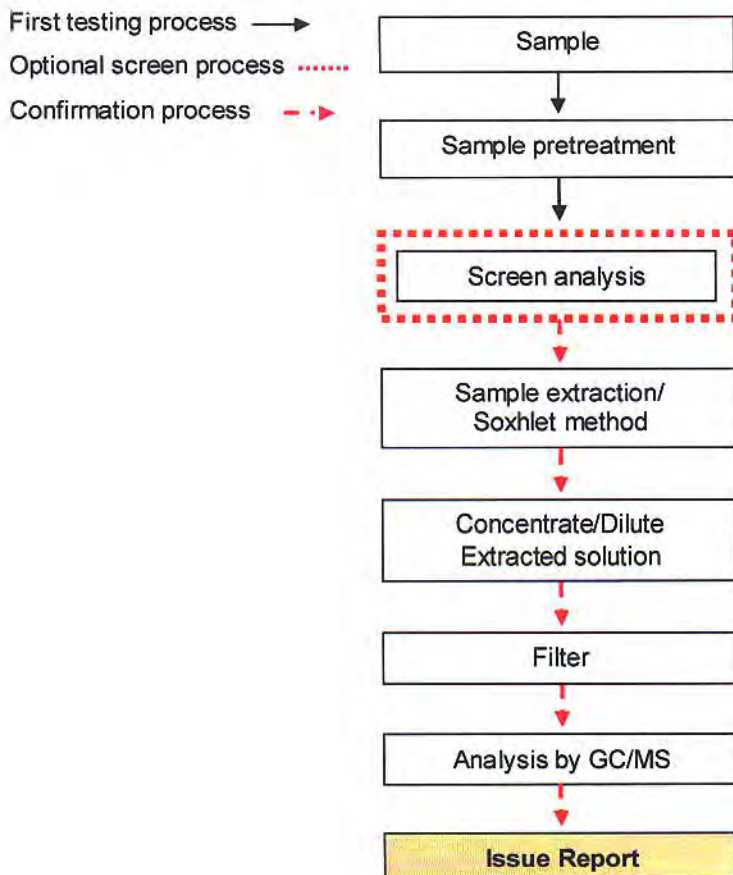
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### PBB/PBDE analytical FLOW CHART

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



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## Test Report

No. : CE/2011/B4950

Date : 2011/12/01

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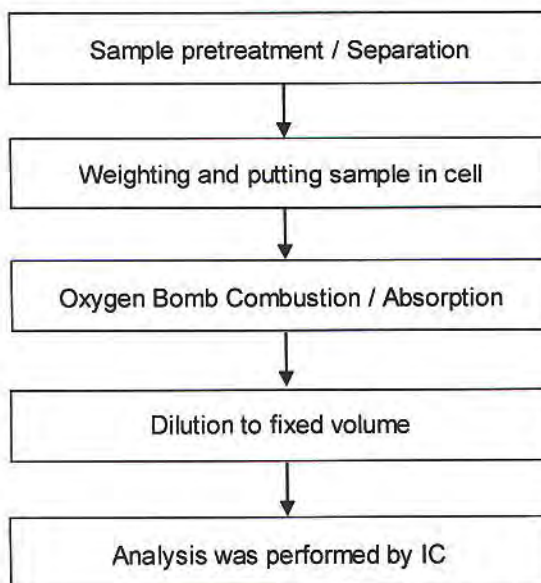
POLYFIL AG

OBERALLMENDSTRASSE 20A, CH-6300 ZUG / SWITZERLAND



### 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



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# Test Report

No. : CE/2011/B4950

Date : 2011/12/01

Page: 7 of 7

POLYFIL AG

OBERALLMENDSTRASSE 20A, CH-6300 ZUG / SWITZERLAND



\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

**CE/2011/B4950**



\*\* End of Report \*\*

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**TEST REPORT**

NUMBER: SHAH00300774

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: FEB 02, 2012

**SAMPLE DESCRIPTION:**

One(1) submitted sample said to be **wire with plating**.

Part Description : Wire(Elschukon).

Part Number : 004206.

Date Sample Received : Jan.17, 2012.

Date Test Started : Jan.17, 2012.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

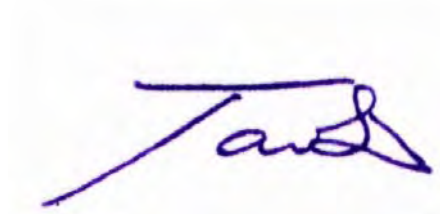
TO BE CONTINUED

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI



MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI



JACOB LIN  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00300774

TESTS CONDUCTED

( I ) Test Result Summary :

| <u>Testing Item</u>                                                     | <u>Result (ppm)</u>  |
|-------------------------------------------------------------------------|----------------------|
|                                                                         | (1)                  |
| <b>Heavy Metal</b>                                                      |                      |
| Cadmium (Cd) content                                                    | ND                   |
| Lead (Pb) content                                                       | 20                   |
| Mercury (Hg) content                                                    | ND                   |
| Chromium VI (Cr <sup>6+</sup> ) content (mg/kg with 50cm <sup>2</sup> ) | Negative (< 0.02)(#) |

| <u>Testing Item</u>                                                             | <u>Result (ppm)</u>  |
|---------------------------------------------------------------------------------|----------------------|
|                                                                                 | (2)                  |
| <b>Heavy Metal</b>                                                              |                      |
| Cadmium (Cd) content/PLATING                                                    | ND                   |
| Lead (Pb) content/PLATING                                                       | 238                  |
| Mercury (Hg) content/PLATING                                                    | ND                   |
| Chromium VI (Cr <sup>6+</sup> ) content (mg/kg with 50cm <sup>2</sup> )/PLATING | Negative (< 0.02)(#) |

Tested components:

- (1) Substrate
- (2) Plating

Remarks: ppm = Parts per million = mg/kg

ND = Not detected

# = Due to the insufficient sample area, reduced total sample surface of 10 cm<sup>2</sup> was used and the dilution factor was adjusted accordingly.

mg/kg with 50cm<sup>2</sup> = milligram per kilogram with 50 square centimetre

Negative = A negative test result indicated positive observation was not found at the time of testing.

Responsibility Of Chemist :Dent Fang / Ken He

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00300774

TESTS CONDUCTED

(II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00300774

TESTS CONDUCTED

(III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u>            |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                             |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                             |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                             |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex B, by boiling water extraction and determined by UV-Vis spectrophotometer.                                | 0.02 mg/kg with 50cm <sup>2</sup> |

Remark: Reporting limit = Quantitation limit of analyte in sample

Date Sample Received : JAN.17, 2012

Testing Period : JAN.17, 2012 TO JAN.21, 2012

\*\*\*\*\*

TO BE CONTINUED

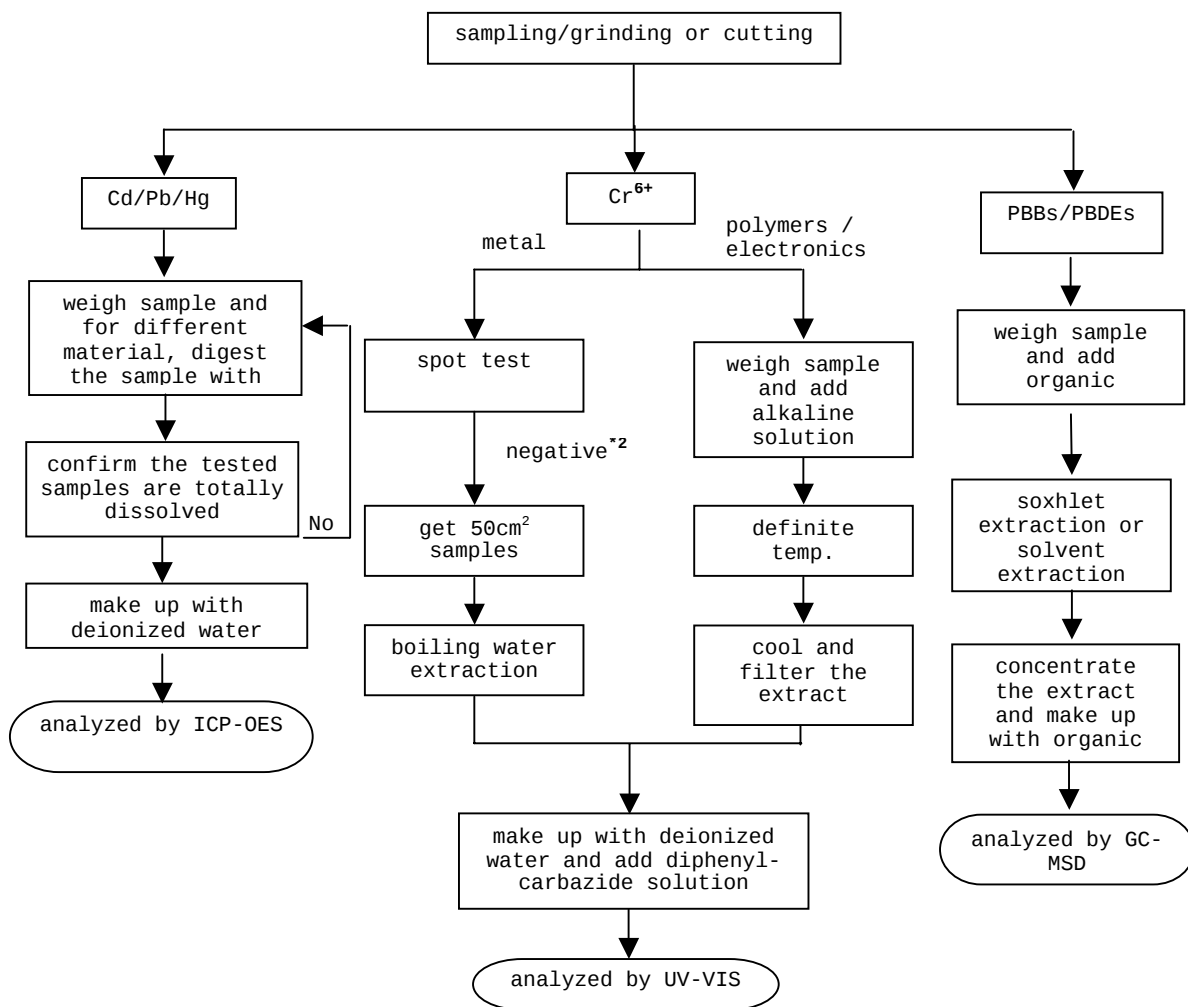
**TEST REPORT**

NUMBER: SHAH00300774

**TESTS CONDUCTED**

**(IV) Measurement Flowchart:**

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
 Reference Standard: IEC 62321 edition 1.0:2008



\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00300774

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00300774

TESTS CONDUCTED



\*\*\*\*\*

END OF REPORT



**TEST REPORT**

NUMBER: SHAH00300757

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: FEB 02, 2012

**SAMPLE DESCRIPTION:**

One(1) submitted sample said to be **Wire with plating.**

Part Description : Wire(Polyil).

Part Number : 687279-001.

Date Sample Received : Jan.17, 2012.

Date Test Started : Jan.17, 2012.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

To Be Continued

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FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

JACOB LIN  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00300757

TESTS CONDUCTED

( I ) Test Result Summary :

| <u>Testing Item</u>                                                     | <u>Result (ppm)</u>  |
|-------------------------------------------------------------------------|----------------------|
|                                                                         | (1)                  |
| <b>Heavy Metal</b>                                                      |                      |
| Cadmium (Cd) content                                                    | ND                   |
| Lead (Pb) content                                                       | ND                   |
| Mercury (Hg) content                                                    | ND                   |
| Chromium VI (Cr <sup>6+</sup> ) content (mg/kg with 50cm <sup>2</sup> ) | Negative (< 0.02)(#) |

| <u>Testing Item</u>                                                             | <u>Result (ppm)</u>  |
|---------------------------------------------------------------------------------|----------------------|
|                                                                                 | (2)                  |
| <b>Heavy Metal</b>                                                              |                      |
| Cadmium (Cd) content/Plating                                                    | ND                   |
| Lead (Pb) content/Plating                                                       | 72                   |
| Mercury (Hg) content/Plating                                                    | ND                   |
| Chromium VI (Cr <sup>6+</sup> ) content (mg/kg with 50cm <sup>2</sup> )/Plating | Negative (< 0.02)(#) |

Tested components:

- (1) Substrate
- (2) Plating

Remarks: ppm = Parts per million = mg/kg

ND = Not detected

# = Due to the insufficient sample area, reduced total sample surface of 10 cm<sup>2</sup> was used and the dilution factor was adjusted accordingly.

mg/kg with 50cm<sup>2</sup> = milligram per kilogram with 50 square centimetre

Negative = A negative test result indicated positive observation was not found at the time of testing.

Responsibility Of Chemist : Dent Fang / Ken He

Date Sample Received : Jan.17, 2012

Testing Period : Jan.21, 2012

\*\*\*\*\*

To Be Continued

## TEST REPORT

NUMBER: SHAH00300757

### TESTS CONDUCTED

#### (II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

#### (III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u>            |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                             |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                             |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                             |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex B, by boiling water extraction and determined by UV-Vis spectrophotometer.                                | 0.02 mg/kg with 50cm <sup>2</sup> |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

To Be Continued

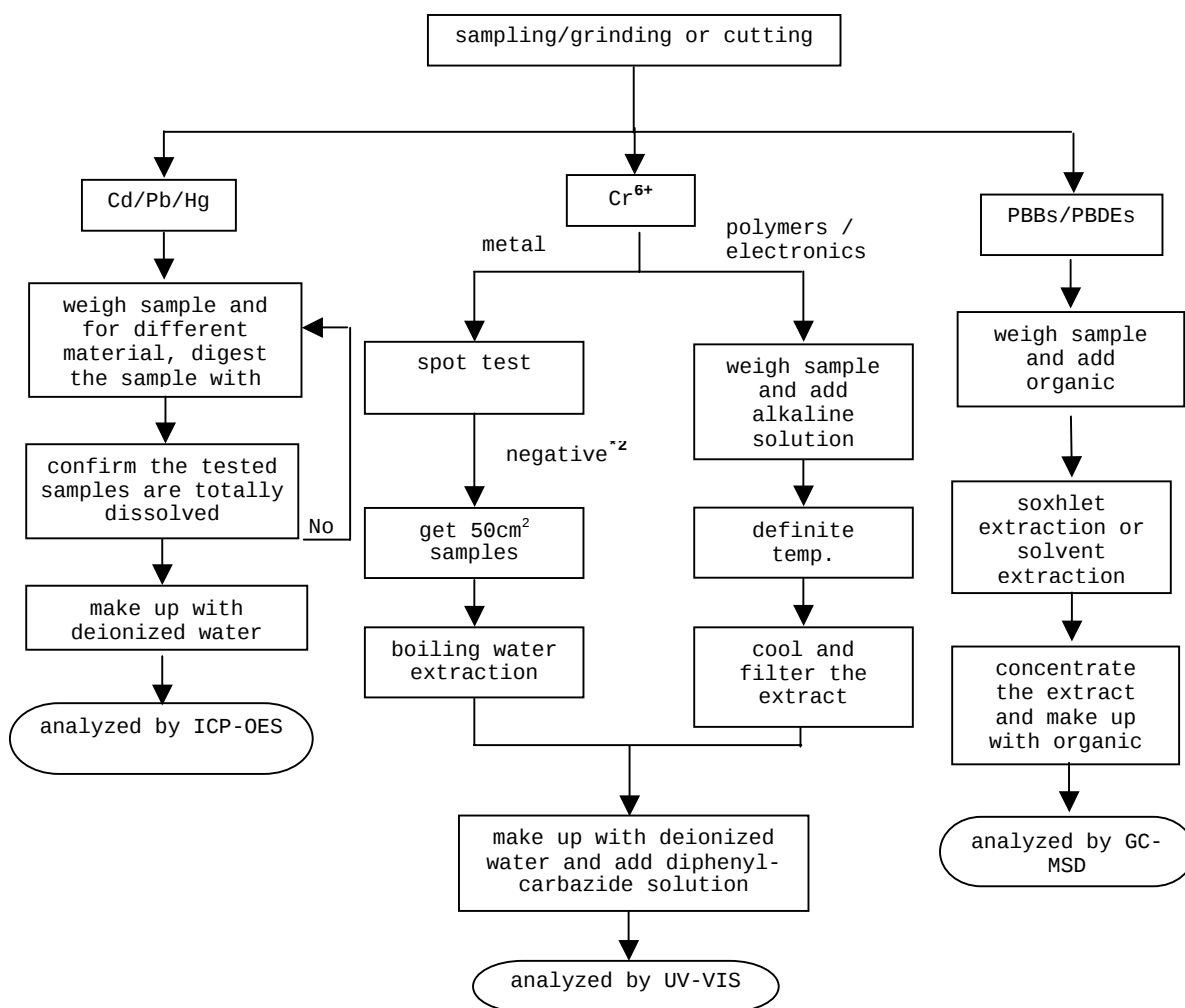
## TEST REPORT

NUMBER: SHAH00300757

### TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
 Reference Standard: IEC 62321 edition 1.0:2008



\*\*\*\*\*

To Be Continued



**TEST REPORT**

NUMBER: SHAH00300757

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

To Be Continued

**TEST REPORT**

NUMBER: SHAH00300757

TESTS CONDUCTED



\*\*\*\*\*

End Of Report



**TEST REPORT**

NUMBER: SHAH00299962

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: JAN 18, 2012

**SAMPLE DESCRIPTION:**

One(1) submitted sample said to be **white yarn**.

Part Description : YARN.

Part Number : 648901.

Date Sample Received : Jan.11, 2012.

Date Test Started : Jan.11, 2012.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

TO BE CONTINUED

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CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
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LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00299962

TESTS CONDUCTED

1 (I) Test Result Summary :

| <u>Testing Item</u>    | <u>Result (ppm)</u> |
|------------------------|---------------------|
| <b>Halogen Content</b> |                     |
| Fluorine (F)           | 820                 |
| Chlorine (Cl)          | ND                  |
| Bromine (Br)           | ND                  |
| Iodine (I)             | ND                  |

Remarks: ppm = Parts per million based on weight of tested sample =  
 mg/kg  
 ND = Not detected

Responsibility Of Chemist : Ken He

(II) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*  
 TO BE CONTINUED

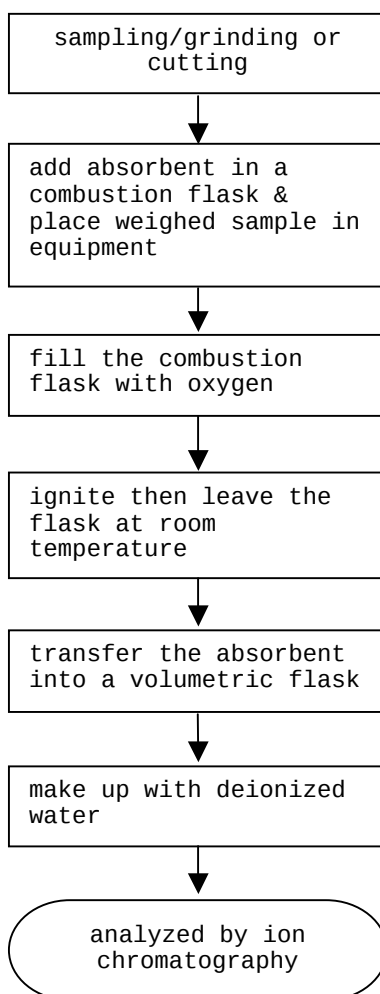
**TEST REPORT**

NUMBER: SHAH00299962

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



\*\*\*\*\*

TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00299962

### TESTS CONDUCTED

#### 2 (I) Test Result Summary :

| <u>Testing Item</u>                           | <u>Result (ppm)</u> |
|-----------------------------------------------|---------------------|
| <b>Heavy Metal</b>                            |                     |
| Cadmium (Cd) content                          | ND                  |
| Lead (Pb) content                             | ND                  |
| Mercury (Hg) content                          | ND                  |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND                  |
| <b>Polybrominated Biphenyls (PBBs)</b>        |                     |
| Monobrominated Biphenyls (MonoBB)             | ND                  |
| Dibrominated Biphenyls (DiBB)                 | ND                  |
| Tribrominated Biphenyls (TriBB)               | ND                  |
| Tetrabrominated Biphenyls (TetraBB)           | ND                  |
| Pentabrominated Biphenyls (PentaBB)           | ND                  |
| Hexabrominated Biphenyls (HexaBB)             | ND                  |
| Heptabrominated Biphenyls (HeptaBB)           | ND                  |
| Octabrominated Biphenyls (OctaBB)             | ND                  |
| Nonabrominated Biphenyls (NonaBB)             | ND                  |
| Decabrominated Biphenyl (DecaBB)              | ND                  |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |                     |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND                  |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND                  |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND                  |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND                  |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND                  |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND                  |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND                  |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND                  |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND                  |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND                  |

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00299962

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist : Dent Fang / Ken He

(II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00299962

TESTS CONDUCTED  
(III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                  |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm                  |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |

Remark: Reporting limit = Quantitation limit of analyte in sample

DATE SAMPLE RECEIVED : JAN.11, 2012

TESTING PERIOD : JAN.11, 2012 TO JAN.13, 2012

\*\*\*\*\*

TO BE CONTINUED

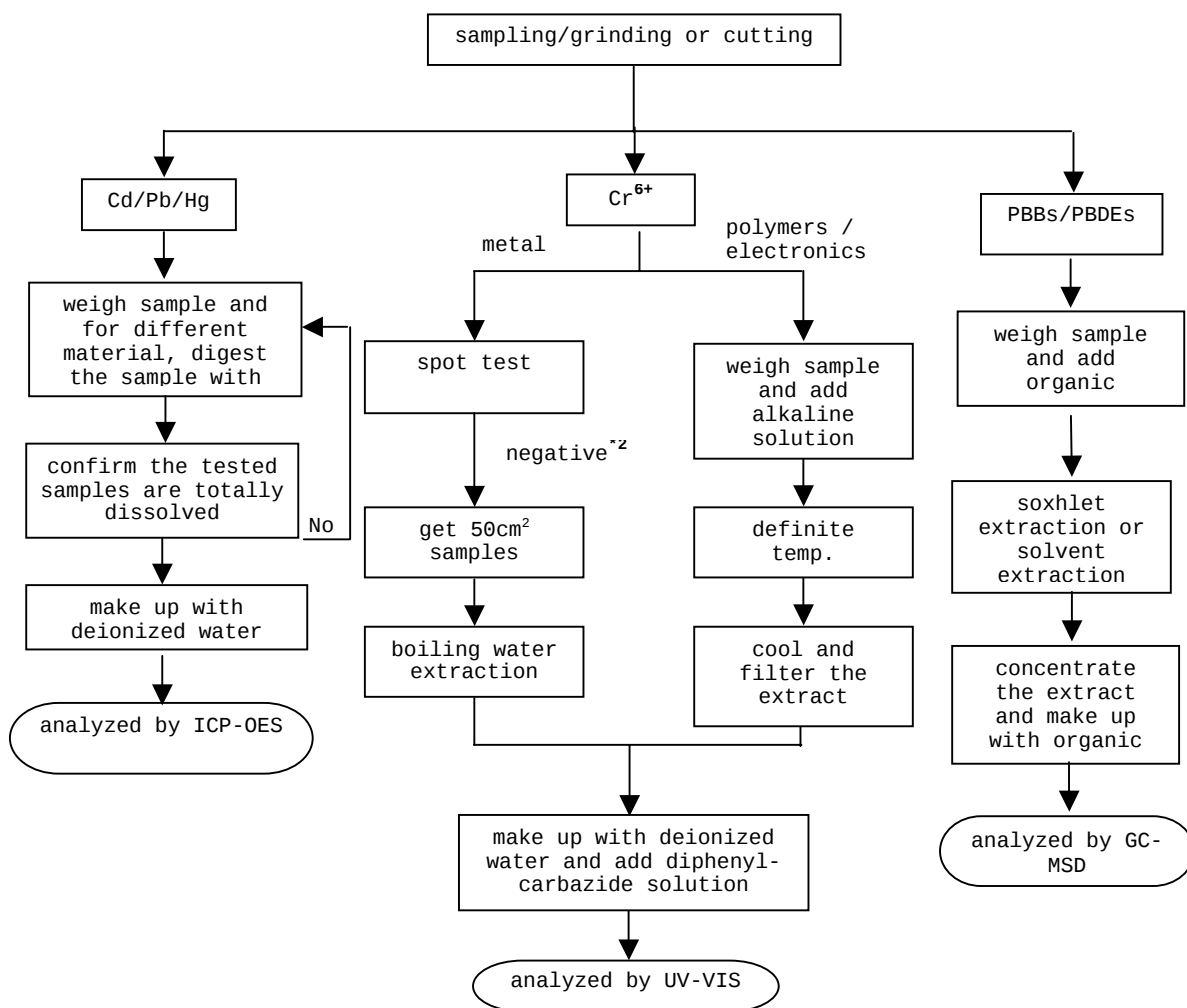
**TEST REPORT**

NUMBER: SHAH00299962

**TESTS CONDUCTED**

(IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
 Reference Standard: IEC 62321 edition 1.0:2008



\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00299962

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00299962

TESTS CONDUCTED



\*\*\*\*\*

END OF REPORT



**TEST REPORT**

NUMBER: SHAH00299991

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: JAN 18, 2012

**SAMPLE DESCRIPTION:**

One (1) submitted sample said to be **Orange Liquid**.

Part description : FLUX.

Part number : 195116.

Date sample received : Jan.11, 2012.

Date test started : Jan.11, 2012.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

TO BE CONTINUED

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
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LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00299991

CONCLUSION:

| <u>TESTED SAMPLE/<br/>COMPONENT</u>        | <u>STANDARD</u>                                                                                                                                                                       | <u>RESULT</u> |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| TESTED COMPONENT<br>OF SUBMITTED<br>SAMPLE | PHthalates Content Requirement<br>in Annex XVII Items 51 & 52 of<br>the REACH Regulation (EC) No.<br>1907/2006 & Amendment<br>No.552/2009 (formerly known as<br>Directive 2005/84/EC) | PASS          |

| <u>TESTED SAMPLE/COMPONENT</u>          | <u>STANDARD</u>                                                                                     | <u>RESULT</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------|---------------|
| TESTED COMPONENT OF<br>SUBMITTED SAMPLE | US Consumer Product Safety<br>Improvement Act 2008 Title I,<br>Sec 108 Requirement on<br>Phthalates | PASS          |

\*\*\*\*\*

\*\*\*\*\*

PREPARED AND CHECKED BY:  
 FOR INTERTEK TESTING SERVICES  
 LTD., SHANGHAI

AUTHORIZED BY:  
 FOR INTERTEK TESTING SERVICES  
 LTD., SHANGHAI



MYRA LV  
 CHEMICAL LAB SENIOR MANAGER



STEPHEN TSANG  
 GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00299991

TESTS CONDUCTED

1 PHthalate Content Test

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

| <u>TESTED COMPOUND</u>            | <u>RESULT (% ,W/W)</u> | <u>LIMIT(% ,W/W)</u><br><u>(MAX. )</u> |
|-----------------------------------|------------------------|----------------------------------------|
| DIBUTYL PHTHALATE (DBP)           | ND                     | ---                                    |
| DI(2-ETHYL HEXYL) PHTHALATE(DEHP) | ND                     | ---                                    |
| BENZYL BUTYL PHTHALATE (BBP)      | ND                     | ---                                    |
| SUM OF THREE PHTHALATES           | ND                     | 0.1                                    |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII  
ITEMS 51 & 52 OF THE REACH REGULATION (EC) NO. 1907/2006  
& AMENDMENT NO.552/2009 (FORMERLY KNOWN AS DIRECTIVE  
2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN  
CARE ARTICLES.

DETECTION LIMIT = 0.01%(W/W)  
ND = NOT DETECTED

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00299991

TESTS CONDUCTED

2 (I) Test Result Summary :

| <u>Testing Item</u>    | <u>Result (ppm)</u> |
|------------------------|---------------------|
| <b>Halogen Content</b> |                     |
| Fluorine (F)           | ND                  |
| Chlorine (Cl)          | 8200                |
| Bromine (Br)           | ND                  |
| Iodine (I)             | ND                  |

Remarks: ppm = Parts per million based on weight of tested sample =  
mg/kg  
ND = Not detected

Responsibility Of Chemist : Ken He

(III) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample  
\*\*\*\*\*

TO BE CONTINUED

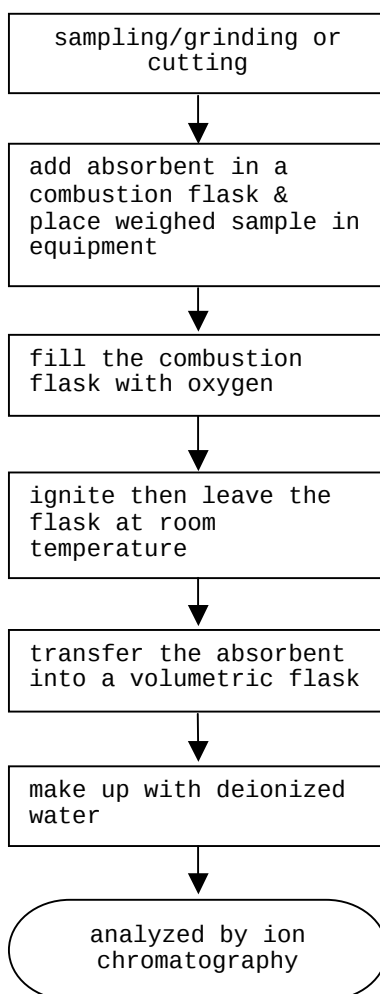
**TEST REPORT**

NUMBER: SHAH00299991

TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00299991

TESTS CONDUCTED

3 (I) Test Result Summary :

| <u>Testing Item</u>                           | <u>Result (ppm)</u> |
|-----------------------------------------------|---------------------|
| <b>Heavy Metal</b>                            |                     |
| Cadmium (Cd) content                          | ND                  |
| Lead (Pb) content                             | ND                  |
| Mercury (Hg) content                          | ND                  |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND                  |
| <b>Polybrominated Biphenyls (PBBs)</b>        |                     |
| Monobrominated Biphenyls (MonoBB)             | ND                  |
| Dibrominated Biphenyls (DiBB)                 | ND                  |
| Tribrominated Biphenyls (TriBB)               | ND                  |
| Tetrabrominated Biphenyls (TetraBB)           | ND                  |
| Pentabrominated Biphenyls (PentaBB)           | ND                  |
| Hexabrominated Biphenyls (HexaBB)             | ND                  |
| Heptabrominated Biphenyls (HeptaBB)           | ND                  |
| Octabrominated Biphenyls (OctaBB)             | ND                  |
| Nonabrominated Biphenyls (NonaBB)             | ND                  |
| Decabrominated Biphenyl (DecaBB)              | ND                  |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |                     |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND                  |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND                  |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND                  |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND                  |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND                  |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND                  |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND                  |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND                  |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND                  |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND                  |

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00299991

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist :Dent Fang / Ken He

(II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ehters (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00299991

**TESTS CONDUCTED**

(III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                  |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm                  |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

TO BE CONTINUED

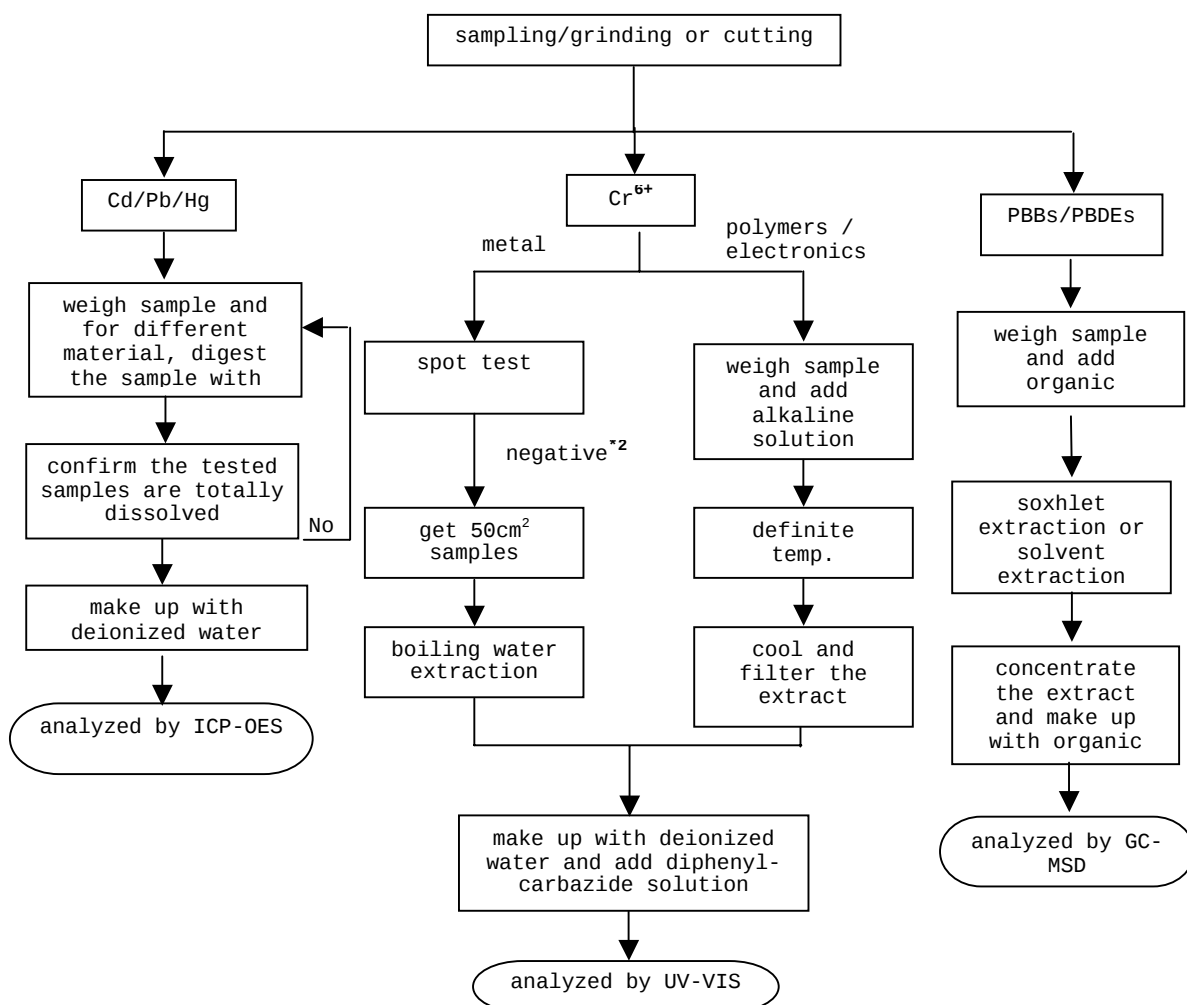
**TEST REPORT**

NUMBER: SHAH00299991

TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
 Reference Standard: IEC 62321 edition 1.0:2008



\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00299991

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED

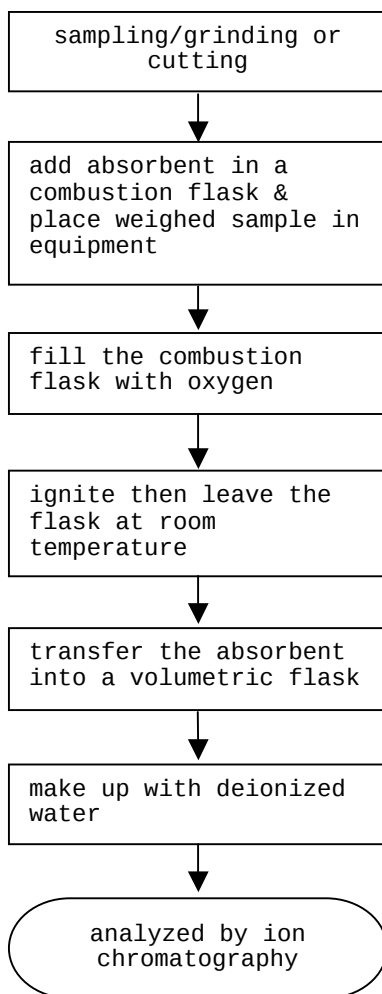
**TEST REPORT**

NUMBER: SHAH00299991

TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582





**TEST REPORT**

NUMBER: SHAH00299991

TESTS CONDUCTED

4 PHthalate Content Test

WITH REFERENCE TO ASTM D3421, BY GAS CHROMATOGRAPHY-MASS  
SPECTROMETRY (GC-MS) ANALYSIS.

|                                    | <u>RESULT (% , w/w)</u> | <u>LIMIT (% , w/w)</u><br><u>(MAX.)</u> |
|------------------------------------|-------------------------|-----------------------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND                      | 0.1                                     |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND                      | 0.1                                     |
| BENZYL BUTYL PHTHALATE (BBP)       | ND                      | 0.1                                     |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER  
PRODUCT SAFETY IMPROVEMENT ACT 2008 FOR PROHIBITION ON  
SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01% (w/w)

ND = NOT DETECTED

\*\*\*\*\*

TO BE CONTINUED

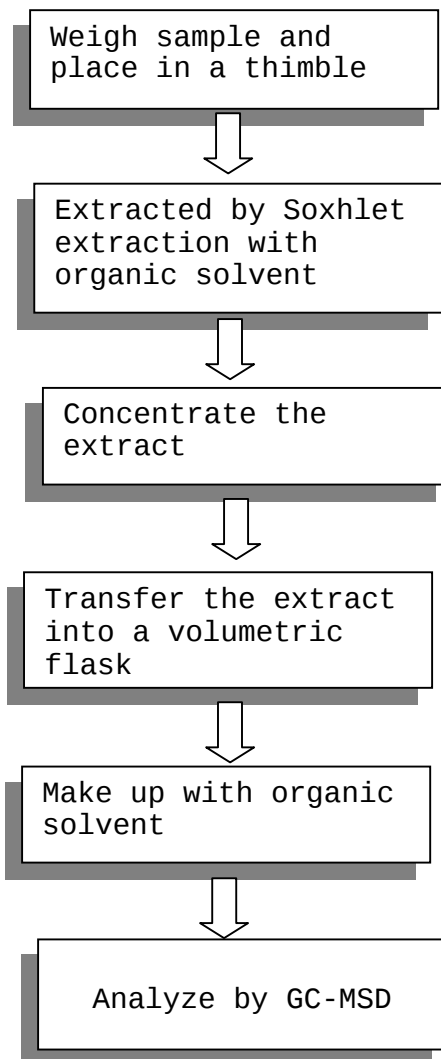
**TEST REPORT**

NUMBER: SHAH00299991

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00299991

TESTS CONDUCTED

5 TEST RESULT SUMMARY:

| <u>TESTING ITEM</u>           | <u>RESULT (ppm)</u> |
|-------------------------------|---------------------|
| HBCD (HEXABROMOCYCLODODECANE) | ND                  |

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

| <u>TESTING ITEM</u>           | <u>TESTING METHOD</u>                                                                 | <u>REPORTING<br/>LIMIT</u> |
|-------------------------------|---------------------------------------------------------------------------------------|----------------------------|
| HBCD (HEXABROMOCYCLODODECANE) | WITH REFERENCE TO USEPA<br>3540C, BY SOLVENT<br>EXTRACTION AND DETERMINED<br>BY GC/MS | 10 ppm                     |

DATE SAMPLE RECEIVED : JAN.11, 2012

TESTING PERIOD : JAN.11, 2012 TO JAN.16, 2012

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00299991

TESTS CONDUCTED



\*\*\*\*\*  
END OF REPORT



## Test Report

No. SHAEC1216714750

Date: 25 Sep 2012

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ZHEJIANG ASIA GENERAL SOLDERING&BRAZING MATERIAL CO., LTD  
XIHU INDUSTRIAL PARK, SANDUN, HANGZHOU CITY, ZHEJIANG, PROVINCE, CHINA

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

SGS Job No. : SP12-028285 - SH  
Part No. (P/N) : YTW102 (692539-002)  
Composition : Sn2.0CuRE  
Date of Sample Received : 21 Sep 2012  
Testing Period : 21 Sep 2012 - 25 Sep 2012  
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 of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of  
SGS-CSTC Ltd.

Fan Jingjie, JJ  
Approved Signatory

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## Test Report

No. SHAEC1216714750

Date: 25 Sep 2012

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Test Results :

### Test Part Description :

| Specimen No. | SGS Sample ID    | Description  |
|--------------|------------------|--------------|
| 1            | SHA12-167147.043 | Silvery 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 2011/65/EU

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 | 043      |
|------------------------------|-------|-------|-----|----------|
| Cadmium (Cd)                 | 100   | mg/kg | 2   | ND       |
| Lead (Pb)                    | 1000  | mg/kg | 2   | 168      |
| Mercury (Hg)                 | 1000  | mg/kg | 2   | ND       |
| Hexavalent Chromium (Cr(VI)) | -     | -     | ◇   | Negative |
| Sum of PBBs                  | 1000  | 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                 | 1000  | mg/kg | -   | ND       |
| Monobromodiphenyl ether      | -     | mg/kg | 5   | ND       |

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SGS Standards Technical Services (Shanghai) Co., Ltd.  
Testing Center

3<sup>rd</sup> Building, No. 889 Yishan Road Xuhui District, Shanghai China 200233  
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

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## Test Report

No. SHAEC1216714750

Date: 25 Sep 2012

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| Test Item(s)             | Limit | Unit  | MDL | 043 |
|--------------------------|-------|-------|-----|-----|
| 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 directive 2011/65/EU, Annex II

(2) ♦Spot-test:

Negative = Absence of Cr(VI) coating, Positive = Presence of Cr(VI) 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 Cr(VI) coating

Positive = Presence of Cr(VI) coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> sample surface area.

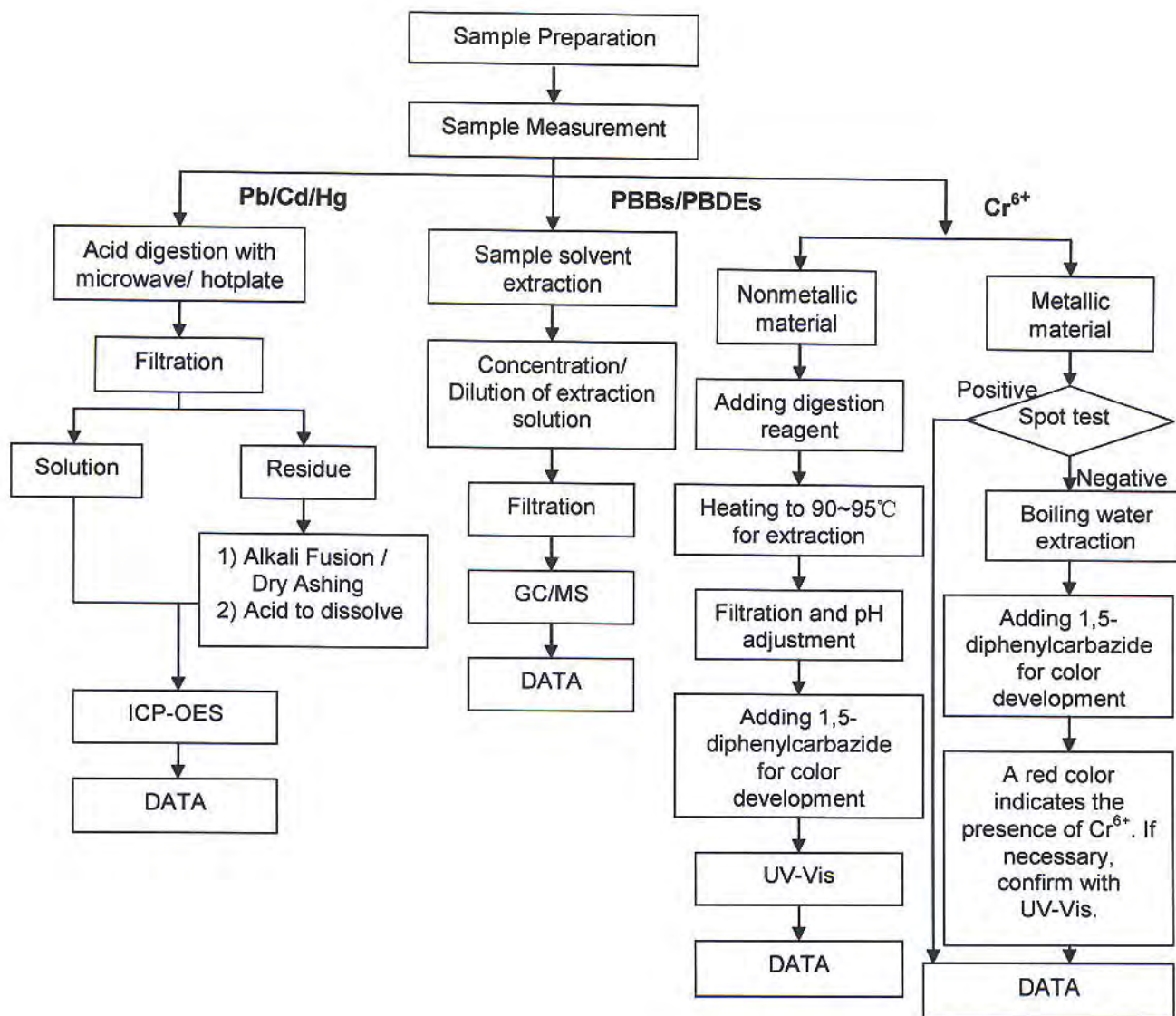
For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

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### ATTACHMENTS

### RoHS Testing Flow Chart

- 1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao/Gary Xu
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Linda Li
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded)



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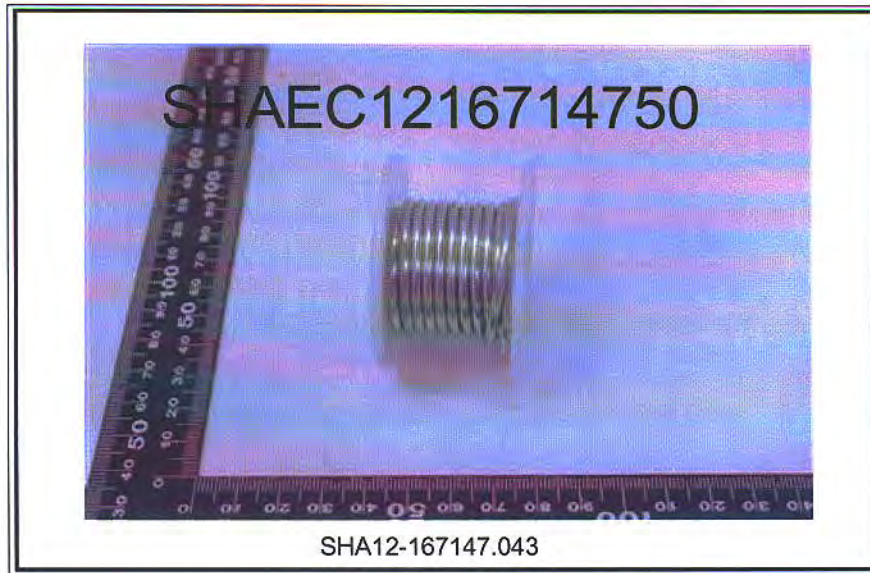
## Test Report

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Sample photo:



SGS authenticate the photo on original report only

\*\*\* End of Report \*\*\*

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# Test Report

No. SHAEC1216714738

Date: 25 Sep 2012

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ZHEJIANG ASIA GENERAL SOLDERING&BRAZING MATERIAL CO., LTD  
XIHU INDUSTRIAL PARK, SANDUN, HANGZHOU CITY, ZHEJIANG, PROVINCE, CHINA

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

SGS Job No. : SP12-028285 - SH  
Part No. (P/N) : YTW206  
Composition : Sn0.3Ag0.7CuCe  
Date of Sample Received : 21 Sep 2012  
Testing Period : 21 Sep 2012 - 25 Sep 2012  
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 of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of  
SGS-CSTC Ltd.



Fan Jingjie, JJ  
Approved Signatory

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Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.

## Test Report

No. SHAEC1216714738

Date: 25 Sep 2012

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Test Results :

### Test Part Description :

| Specimen No. | SGS Sample ID    | Description  |
|--------------|------------------|--------------|
| 1            | SHA12-167147.035 | Silvery 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 2011/65/EU

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 | 035      |
|------------------------------|-------|-------|-----|----------|
| Cadmium (Cd)                 | 100   | mg/kg | 2   | ND       |
| Lead (Pb)                    | 1000  | mg/kg | 2   | 50       |
| Mercury (Hg)                 | 1000  | mg/kg | 2   | ND       |
| Hexavalent Chromium (Cr(VI)) | -     | -     | ◇   | Negative |
| Sum of PBBs                  | 1000  | 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                 | 1000  | mg/kg | -   | ND       |
| Monobromodiphenyl ether      | -     | mg/kg | 5   | ND       |

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## Test Report

No. SHAEC1216714738

Date: 25 Sep 2012

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| Test Item(s)             | Limit | Unit  | MDL | 035 |
|--------------------------|-------|-------|-----|-----|
| 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 directive 2011/65/EU, Annex II

(2) ◇Spot-test:

Negative = Absence of Cr(VI) coating, Positive = Presence of Cr(VI) 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 Cr(VI) coating

Positive = Presence of Cr(VI) coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> 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.

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SGS Standards Technical Services (Shanghai) Co., Ltd.  
Testing Center

3<sup>rd</sup> Building, No. 889 Yishan Road Xuhui District, Shanghai China 200233  
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

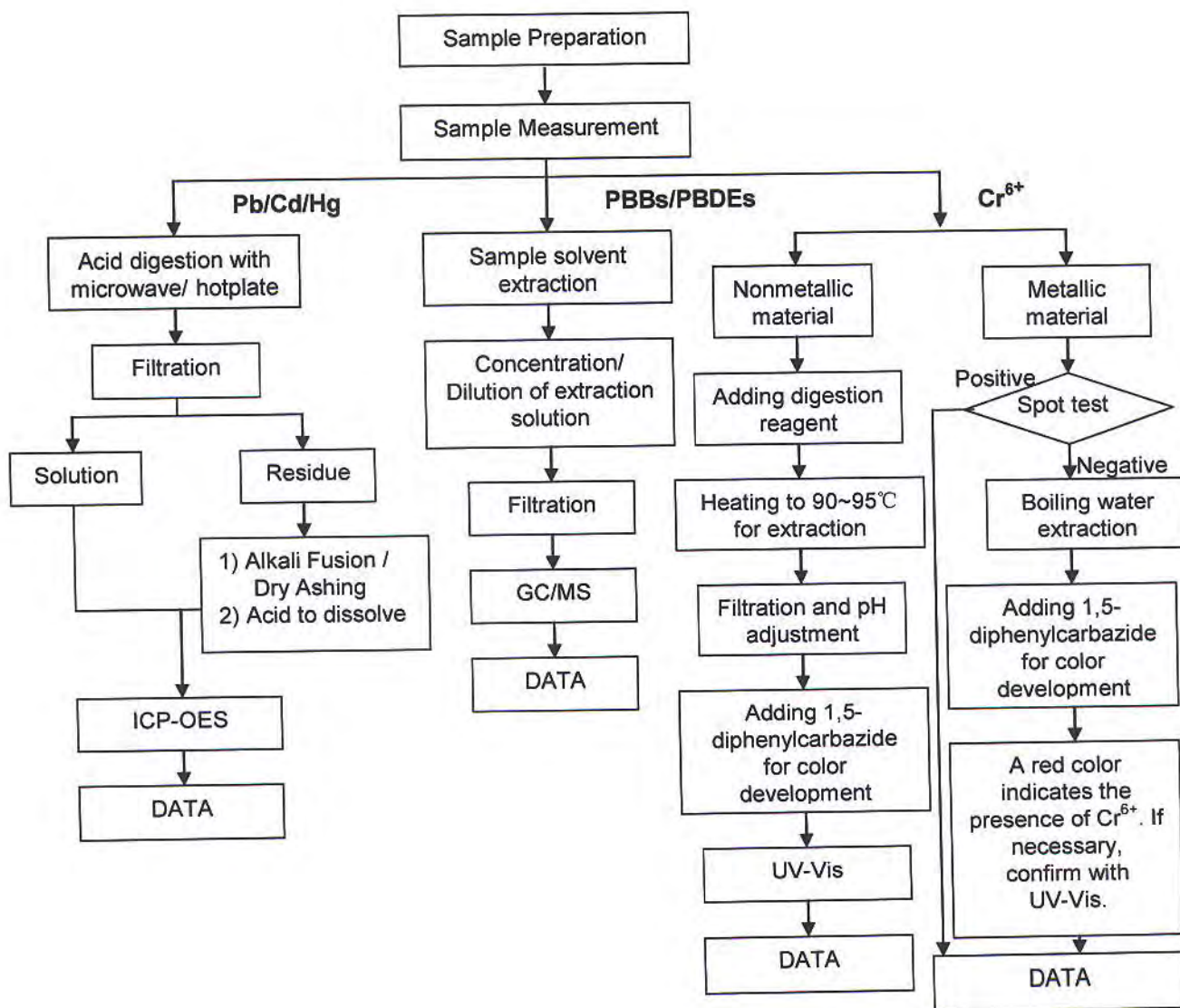
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## ATTACHMENTS

### RoHS Testing Flow Chart

- 1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao/Gary Xu
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Linda Li
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. ( $\text{Cr}^{6+}$  and PBBs/PBDEs test method excluded)



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## Test Report

No. SHAEC1216714738

Date: 25 Sep 2012

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Sample photo:



SGS authenticate the photo on original report only

\*\*\* End of Report \*\*\*

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# TEST REPORT

NO.: A002E11121307-2R02

Date: Dec.15, 2011

Page 1 of 4

**Customer:** SuZhou FuHong Electronic Industrial Co., Ltd.

**Address:** NO. 89 WEI DU ROAD, WANGTING TOWN, XIANGCHENG DISTRICT, SUZHOU, CHINA

**Report on the submitted sample said to be**

**Sample name:** Fuses copper shell

**Model:** /

**Item/Lot No.:** /

**Material:** /

**Description:** /

**Buyer:** /

**Supplier:** /

**Manufacturer:** /

**Sample received date:** Dec.13,2011

**Testing period:** From Dec.13,2011 to Dec.15,2011

## Testing Requested

As specified by client, to determine the Lead, Cadmium, Mercury & Hexavalent Chromium content in the submitted sample in accordance with Directive 2002/95/EC (RoHS).

## Testing method:

| Testing Item     | Pretreatment method        | Measuring instrument | MQL        |
|------------------|----------------------------|----------------------|------------|
| Lead (Pb)        | IEC 62321: 2008, section 9 | ICP-OES              | 2mg/kg     |
| Cadmium (Cd)     | IEC 62321: 2008, section 9 | ICP-OES              | 2 mg/kg    |
| Mercury (Hg)     | IEC 62321: 2008, section 7 | ICP-OES              | 2 mg/kg    |
| Chromium (Cr VI) | IEC 62321: 2008, Annex B   | UV-VIS               | 0.02mg/kg* |

## Note:

-\* 0.02 mg/kg refers to the MQL of sample extraction liquid.

## Conclusion:

-When tested as specified the submitted sample complied with the requirements of commission Decision of 18 Aug 2005 amending Directive 2002/95/EC notified under document 2005/618/EC.

\*\*\*\*\*FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)\*\*\*\*\*

Project Leader  
(Engineer)

Maggie

Approved by  
(Lab manager)

Wickay

Inspected by

(Technical manager)

Weikin



# TEST REPORT

NO.: A002E11121307-2R02

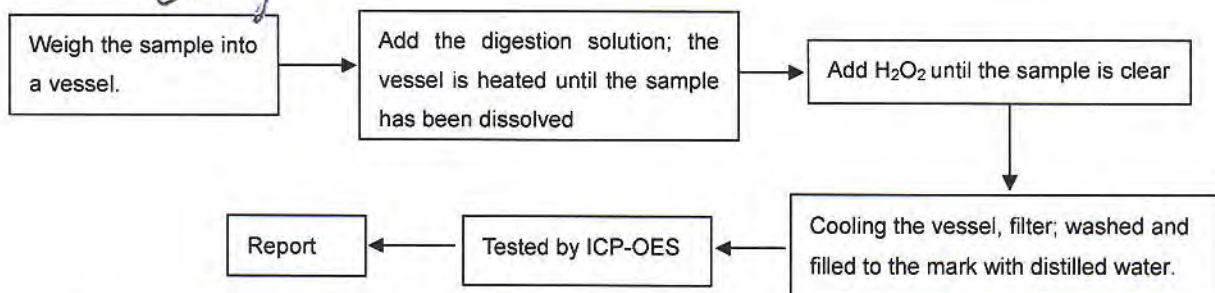
Date: Dec.15, 2011

Page 2 of 4

## Test Flow:

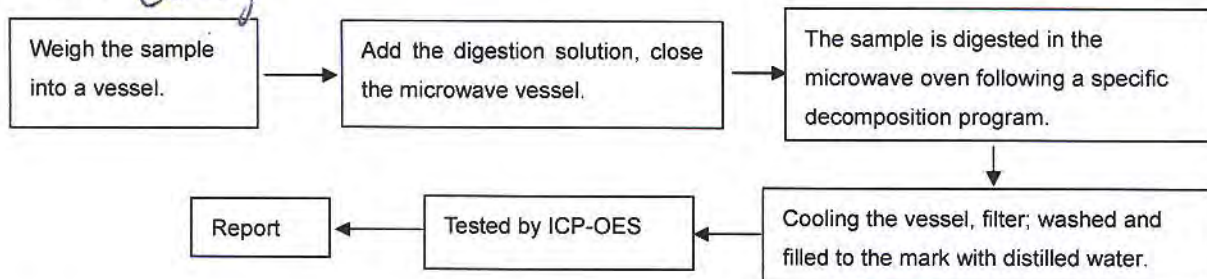
### 1. To Determine Lead, Cadmium Content: (Metal substrate)

Tested by: *Condy*



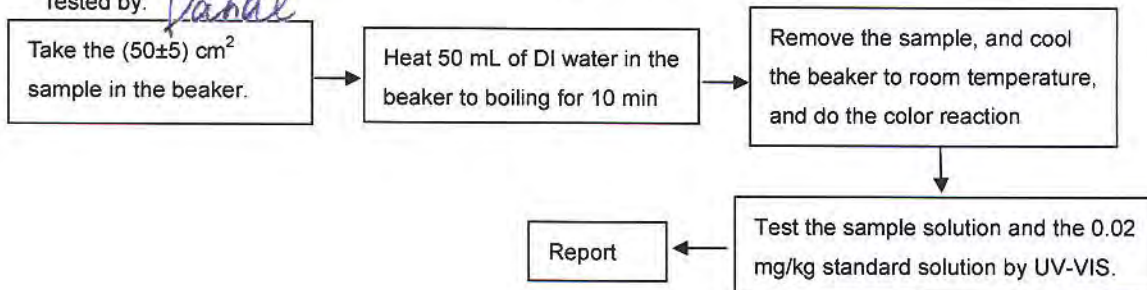
### 2. To Determine Mercury Content: (Metal substrate)

Tested by: *Condy*



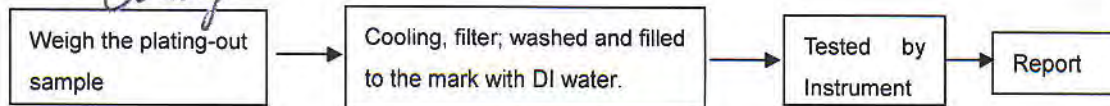
### 3. To Determine Hexavalent Chromium Content (boiling- water- extraction): (Metal substrate)

Tested by: *Danae*



### 4. To Determine Lead, Cadmium and Mercury Content: (Plating)

Tested by: *Condy*



# TEST REPORT

NO.: A002E11121307-2R02

Date: Dec.15, 2011

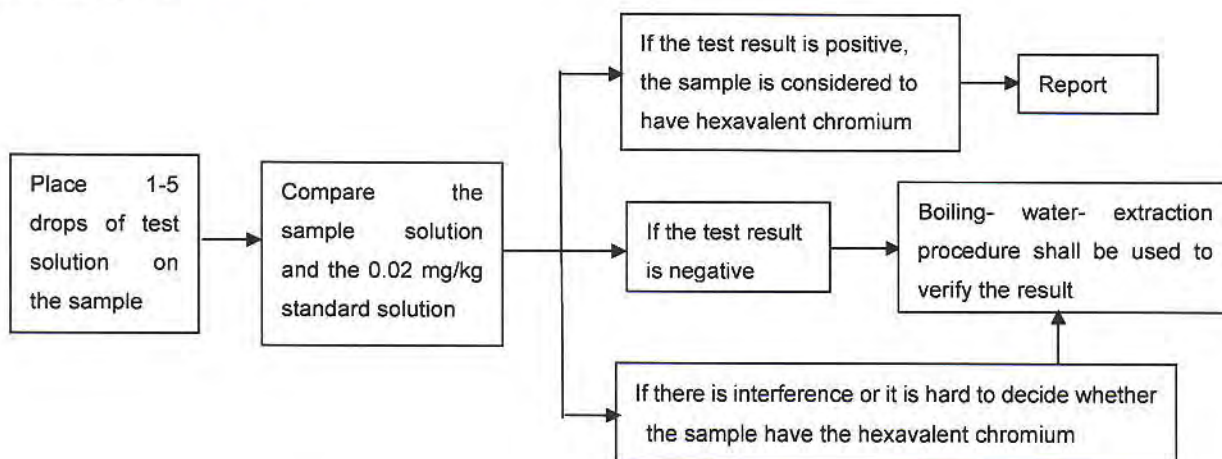
Page 3 of 4

5. To Determine Hexavalent Chromium Content in colorless and colored chromate coating on metals: (Plating)

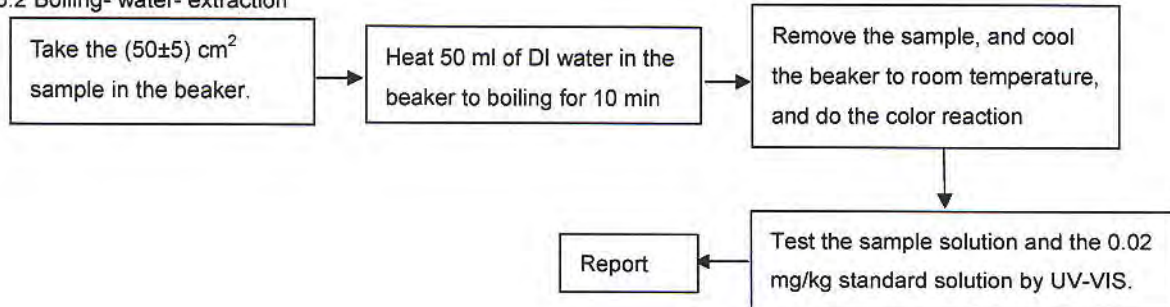
Tested by:

*Danai*

5.1 Spot-test



5.2 Boiling- water- extraction



## Sample description:

| Code | Sample name         | Code | Sample name            |
|------|---------------------|------|------------------------|
| 2-1  | Lead wire substrate | 2-3  | Copper shell substrate |
| 2-2  | Lead wire Plating   | 2-4  | Copper shell Plating   |

## Test Results:

| Item            | Unit  | RoHS Limit | Result   |          |          |          |
|-----------------|-------|------------|----------|----------|----------|----------|
|                 |       |            | 2-1      | 2-2*     | 2-3      | 2-4*     |
| Lead (Pb)       | mg/kg | 1000       | N.D.     | 2.5      | 40.0     | N.D.     |
| Cadmium (Cd)    | mg/kg | 100        | N.D.     | N.D.     | N.D.     | N.D.     |
| Mercury (Hg)    | mg/kg | 1000       | N.D.     | N.D.     | N.D.     | N.D.     |
| Chromium (CrVI) | mg/kg | 1000       | Negative | Negative | Negative | Negative |

# TEST REPORT

NO.: A002E11121307-2R02

Date: Dec.15, 2011

Page 4 of 4

## Note:

-The new RoHS directive 2011/65/EU, on Jul. 21, 2011 come into force, on Jan. 03, 2013 the formal implementation, Directive 2002/95/EC shall be repealed simultaneously.

-Specimens, which requested to determine Lead, Cadmium and Mercury Content, have been dissolved completely.

-mg/kg=ppm

-N.D.=not detected(<MQL)

-MQL=Method Quantitation Limit

-Negative=Absence of Cr (VI);

Positive=Presence of Cr (VI);

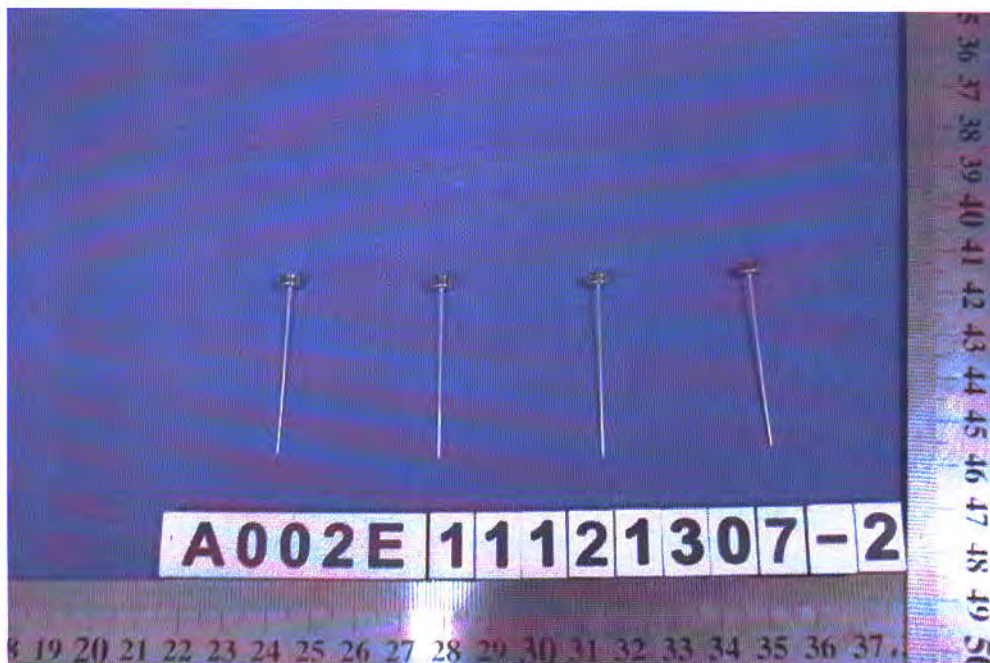
Uncertain= can not verify whether the sample have Hexavalent Chromium by spot-test.

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

-\*The test is based on the following assumption: The sample plating is a single layer and each part is uniform. The test result maybe cannot stand for the physical truth of sample plating.

-Photo is included

## Photograph of Sample



Fuses copper shell

\*\*\*End of Report\*\*\*



## Test Report

No. TSNEC1200272601

Date: 09 Apr 2012

Page 1 of 8

BEIJING HYSTIC NEW MATERIALS CO., LTD.

5 SHUANGYUAN ROAD, BADACHU HIGH-TECH ZONE, BEIJING.

100041, CHINA

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

SGS Job No. : TP12-004950 - TJ

Model No. : EP608

Date of Sample Received : 31 Mar 2012

Testing Period : 31 Mar 2012 - 09 Apr 2012

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 of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of  
SGS-CSTC Ltd.

Aimy Wang  
Approved Signatory

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## Test Report

No. TSNEC1200272601

Date: 09 Apr 2012

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Test Results :

### Test Part Description :

| Specimen No. | SGS Sample ID    | Description       |
|--------------|------------------|-------------------|
| 1            | TSN12-002726.001 | ivory-white paste |

Remarks :

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

### RoHS Directive 2011/65/EU

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 Colorimetric Method using UV-Vis.
- (5) Determination of PBBs / PBDEs content by GC-MS.

| Test Item(s)                 | Limit | Unit  | MDL | 001 |
|------------------------------|-------|-------|-----|-----|
| Cadmium (Cd)                 | 100   | mg/kg | 2   | ND  |
| Lead (Pb)                    | 1000  | mg/kg | 2   | ND  |
| Mercury (Hg)                 | 1000  | mg/kg | 2   | ND  |
| Hexavalent Chromium (Cr(VI)) | 1000  | mg/kg | 2   | ND  |
| Sum of PBBs                  | 1000  | 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                 | 1000  | mg/kg | -   | ND  |
| Monobromodiphenyl ether      | -     | mg/kg | 5   | ND  |

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## Test Report

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Date: 09 Apr 2012

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| <u>Test Item(s)</u>      | <u>Limit</u> | <u>Unit</u> | <u>MDL</u> | <u>001</u> |
|--------------------------|--------------|-------------|------------|------------|
| 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 directive 2011/65/EU, Annex II.

### Hexabromocyclododecane (HBCDD)

Test Method : With reference to IEC 62321:2008, analysis was performed by GC-MS.

| <u>Test Item(s)</u>            | <u>Unit</u> | <u>MDL</u> | <u>001</u> |
|--------------------------------|-------------|------------|------------|
| Hexabromocyclododecane (HBCDD) | mg/kg       | 10         | ND         |

### Notes :

- (1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC:  
Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

### Phthalates

Test Method : With reference to EN14372: 2004, analysis was performed by GC-MS.

| <u>Test Item(s)</u>                 | <u>Unit</u> | <u>MDL</u> | <u>001</u> |
|-------------------------------------|-------------|------------|------------|
| Dibutyl Phthalate (DBP)             | % (w/w)     | 0.003      | ND         |
| Benzylbutyl Phthalate (BBP)         | % (w/w)     | 0.003      | ND         |
| Bis-(2-ethylhexyl) Phthalate (DEHP) | % (w/w)     | 0.003      | ND         |

### Notes :

- (1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC:  
Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP) and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.

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## Test Report

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Date: 09 Apr 2012

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Result shown is of the total weight of wet sample

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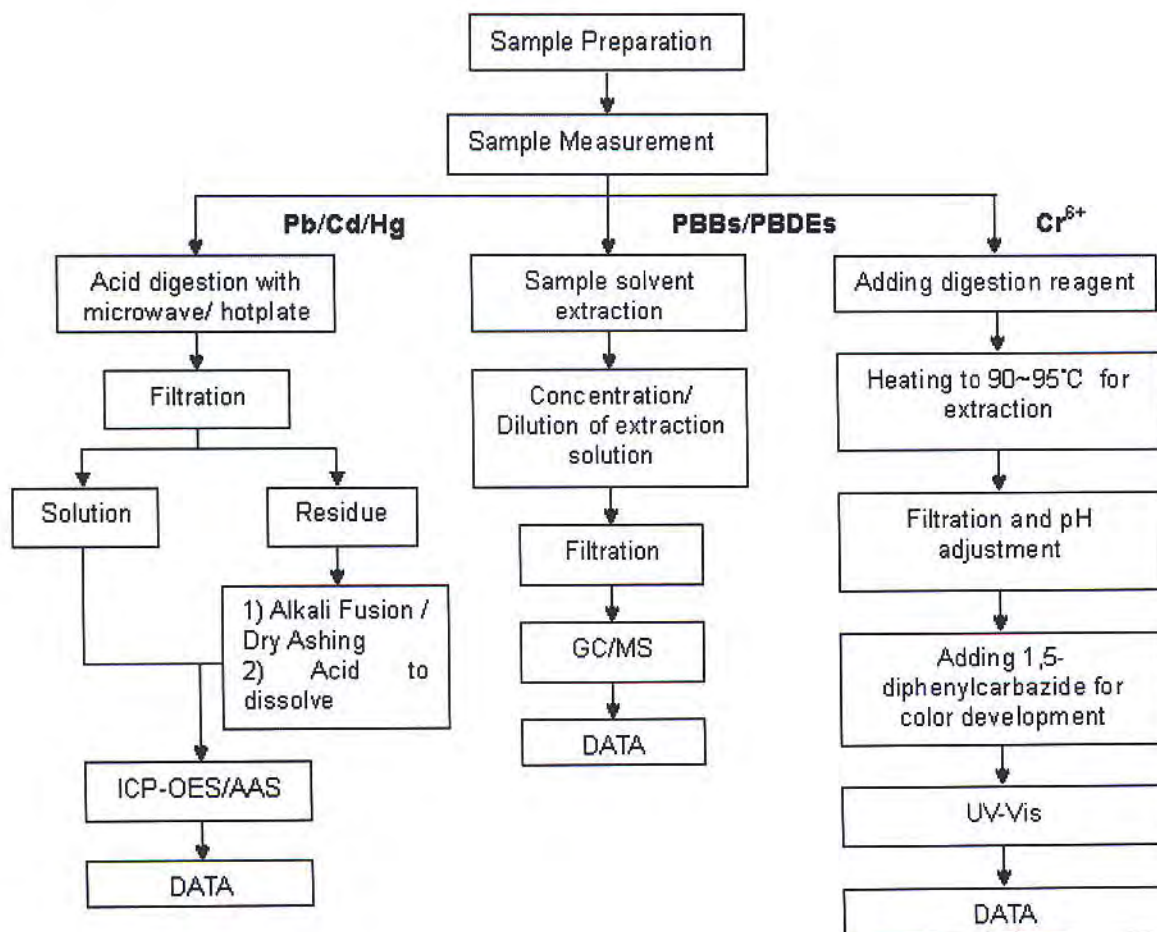
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## ATTACHMENTS

### Cd/Pb/Hg/Cr<sup>6+</sup>/PBBs/PBDEs Flow Chart

- 1) Name of the person who made testing: Aaron Wang/Jason Li /Angell Yao
- 2) Name of the person in charge of testing: Cindy Yin/Rex Zhu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded)



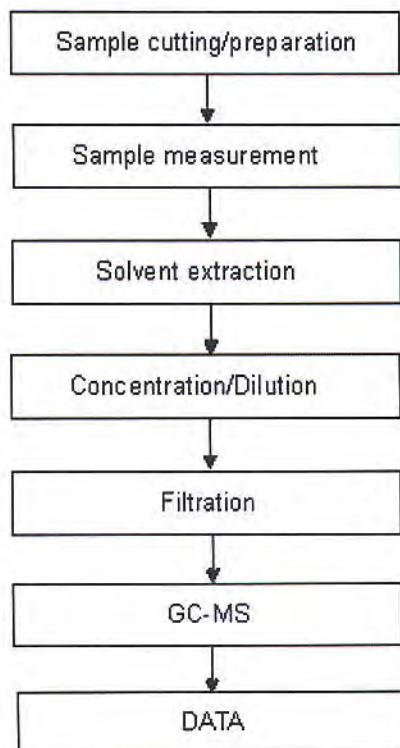
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**ATTACHMENTS**

**HBCDD Testing Flow Chart**

- 1) Name of the person who made testing: Marina Sun
- 2) Name of the person in charge of testing: Rex Zhu



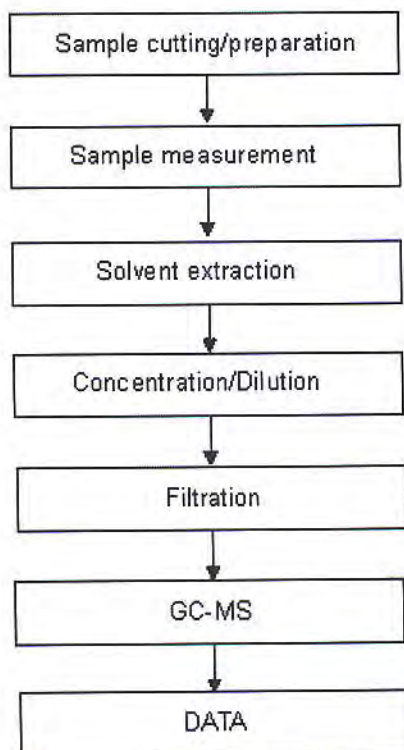
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**ATTACHMENTS**

**Phthalate Testing Flow Chart**

- 1) Name of the person who made testing: Marina Sun
- 2) Name of the person in charge of testing: Rex Zhu



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## Test Report

No. TSNEC1200272601

Date: 09 Apr 2012

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Sample photo:



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## Test Report

No. TSNEC1200272602

Date: 09 Apr 2012

Page 1 of 4

BEIJING HYSTIC NEW MATERIALS CO., LTD.  
5 SHUANGYUAN ROAD, BADACHU HIGH-TECH ZONE, BEIJING.  
100041, CHINA

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

SGS Job No. : TP12-004950 - TJ  
Model No. : EP608  
Date of Sample Received : 31 Mar 2012  
Testing Period : 31 Mar 2012 - 09 Apr 2012  
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).

Signed for and on behalf of  
SGS-CSTC Ltd.

Aimy Wang  
Approved Signatory

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## Test Report

No. TSNEC1200272602

Date: 09 Apr 2012

Page 2 of 4

Test Results :

### Test Part Description :

| Specimen No. | SGS Sample ID    | Description       |
|--------------|------------------|-------------------|
| 1            | TSN12-002726.002 | ivory-white paste |

Remarks :

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

### Halogen

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

| <u>Test Item(s)</u> | <u>Unit</u> | <u>MDL</u> | <u>002</u> |
|---------------------|-------------|------------|------------|
| Fluorine (F)        | mg/kg       | 50         | 57         |
| Chlorine (Cl)       | mg/kg       | 50         | 7557       |
| Bromine (Br)        | mg/kg       | 50         | ND         |
| Iodine (I)          | mg/kg       | 50         | ND         |

Result shown is of the total weight of wet sample

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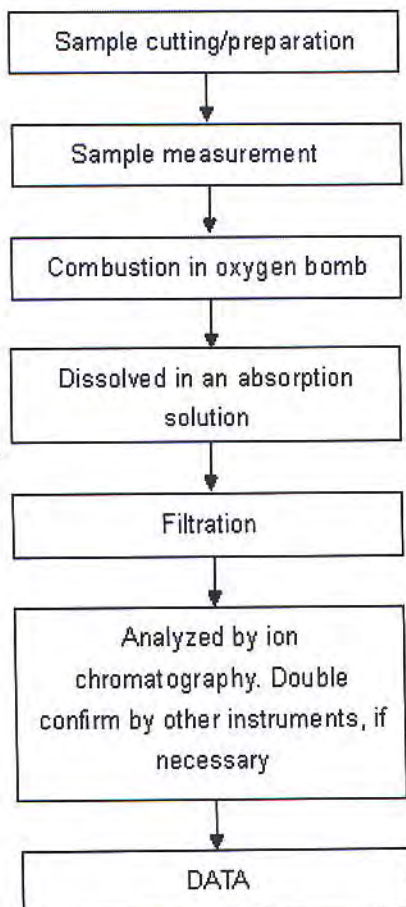
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## ATTACHMENTS

### Halogen Testing Flow Chart

- 1) Name of the person who made testing: Angell Yao
- 2) Name of the person in charge of testing: Rex Zhu



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## Test Report

No. TSNEC1200272602

Date: 09 Apr 2012

Page 4 of 4

Sample photo:



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**Test Report**

Number : TWNC00233072

Applicant: Littelfuse Philippines Inc.  
LIMA Technology Center, Lipa City,  
Malvar, Batangas

Date : Nov 23, 2011

**Sample Description:**

One (1) group of submitted samples said to be :

Part Description : Sand Filler

Part Number : 091250

Date Sample Received : Nov 17, 2011

Date Test Started : Nov 18, 2011

---

**Test Conducted :**

As requested by the applicant, for details please refer to attached pages.

---

Authorized By:  
On Behalf Of Intertek Testing Services  
Taiwan Limited



---

K. Y. Liang  
Director

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approval of the laboratory.

Number : TWNC00233072

Test Conducted  
( I ) Test Result Summary :

| Test Item                                     | Result (ppm) |
|-----------------------------------------------|--------------|
|                                               | Grey Powder  |
| <b>Heavy Metal</b>                            |              |
| Cadmium (Cd) content                          | ND           |
| Lead (Pb) content                             | ND           |
| Mercury (Hg) content                          | ND           |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND           |
| <b>Polybrominated Biphenyls (PBBs)</b>        |              |
| Monobrominated Biphenyls (MonoBB)             | ND           |
| Dibrominated Biphenyls (DiBB)                 | ND           |
| Tribrominated Biphenyls (TriBB)               | ND           |
| Tetrabrominated Biphenyls (TetraBB)           | ND           |
| Pentabrominated Biphenyls (PentaBB)           | ND           |
| Hexabrominated Biphenyls (HexaBB)             | ND           |
| Heptabrominated Biphenyls (HeptaBB)           | ND           |
| Octabrominated Biphenyls (OctaBB)             | ND           |
| Nonabrominated Biphenyls (NonaBB)             | ND           |
| Decabrominated Biphenyl (DecaBB)              | ND           |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |              |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND           |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND           |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND           |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND           |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND           |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND           |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND           |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND           |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND           |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND           |
| <b>Halogen Content</b>                        |              |
| Fluorine (F)                                  | ND           |
| Chlorine (Cl)                                 | ND           |
| Bromine (Br)                                  | ND           |
| Iodine (I)                                    | ND           |

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg  
ND = Not detected

Responsibility of Chemist : Irene Chiou / Kevin Liu / Cathy Chen

Date Sample Received : Nov 17, 2011  
Test Period : Nov 18, 2011 To Nov 21, 2011

Number : TWNC00233072

Test Conducted

(II) RoHS Requirement:

| Restricted Substances                   | Limits         |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs)  | 0.1% (1000ppm) |

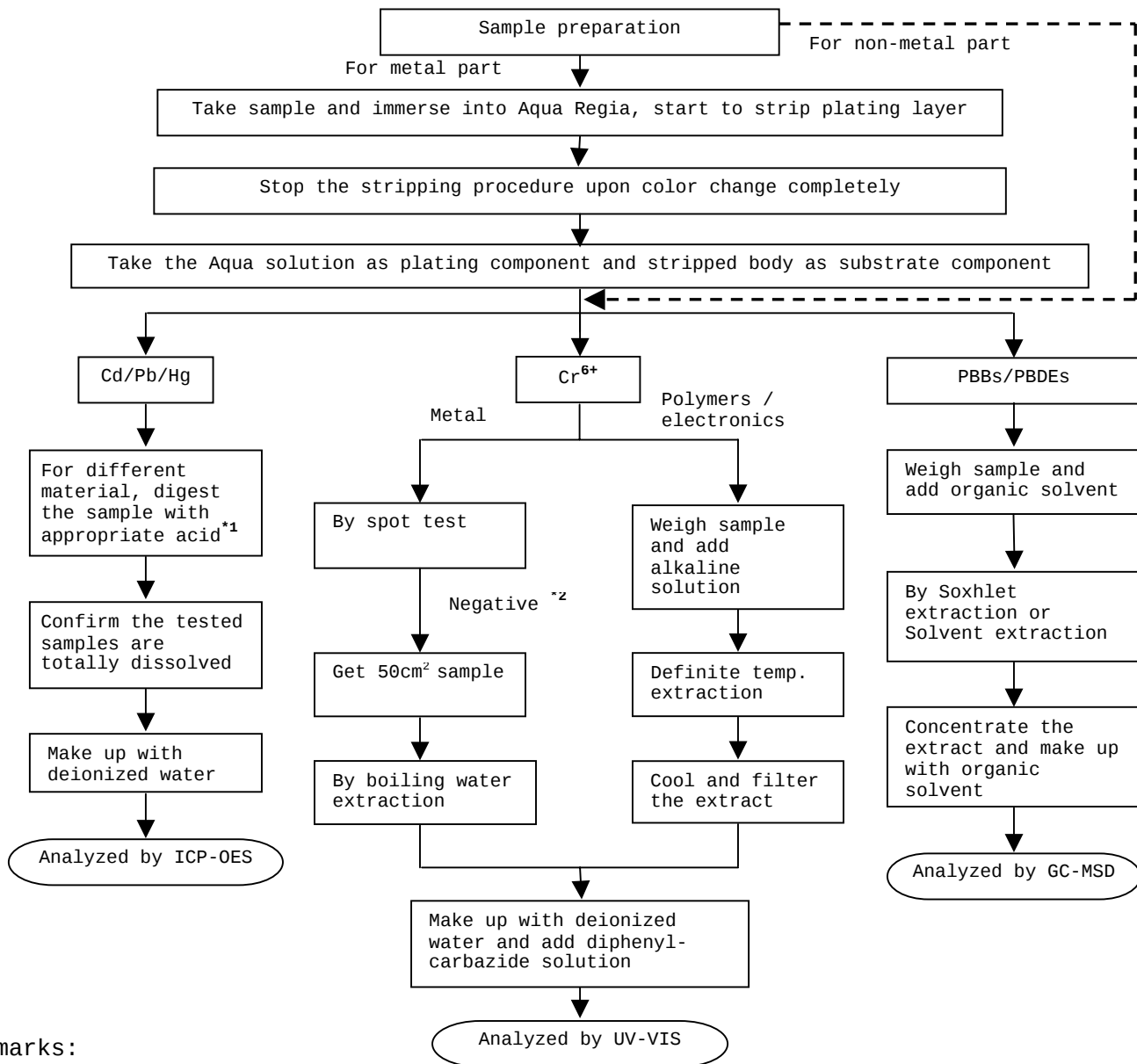
The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

(III) Test Method:

| Test Item                               | Test Method                                                                                                                                                     | Reporting Limit |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm           |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm           |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm           |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm           |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm           |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm           |
| Halogen Content                         | With reference to EN 14582:2007 by calorimetric bomb with oxygen and determined by ion chromatography                                                           | 50 ppm          |

Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted  
(IV) Measurement Flowchart:  
Test for Cd/Pb/Hg/Chromium (VI)/PBBS/PBDES Contents  
Reference Standard: IEC 62321 edition 1.0:2008



Remarks:

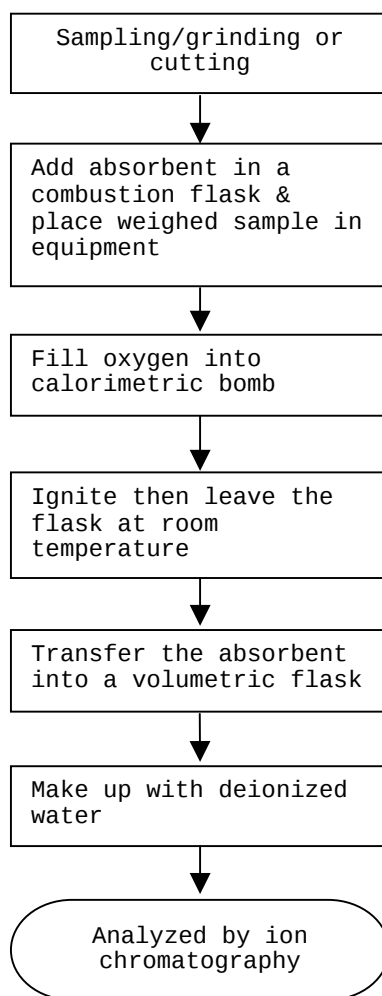
\*1: List of Appropriate Acid :

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

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

Test Conducted  
(IV) Measurement Flowchart:

Test for Halogen Content  
Reference Standard : EN 14582



---

End of Report

Test Conducted

Number : TWNC00233072

Photo





**Test Report**

Number : TWNC00233073

Applicant: Littelfuse Philippines Inc.  
LIMA Technology Center, Lipa City,  
Malvar, Batangas

Date : Nov 23, 2011

**Sample Description:**

One (1) group of submitted samples said to be :

Part Description : Sand Filler

Part Number : 091251

Date Sample Received : Nov 17, 2011

Date Test Started : Nov 18, 2011

---

**Test Conducted :**

As requested by the applicant, for details please refer to attached pages.

---

Authorized By:

On Behalf Of Intertek Testing Services  
Taiwan Limited



---

K. Y. Liang  
Director

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Number : TWNC00233073

Test Conducted  
( I ) Test Result Summary :

| Test Item                                     | Result (ppm)      |
|-----------------------------------------------|-------------------|
|                                               | Light Grey Powder |
| <b>Heavy Metal</b>                            |                   |
| Cadmium (Cd) content                          | ND                |
| Lead (Pb) content                             | ND                |
| Mercury (Hg) content                          | ND                |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND                |
| <b>Polybrominated Biphenyls (PBBs)</b>        |                   |
| Monobrominated Biphenyls (MonoBB)             | ND                |
| Dibrominated Biphenyls (DiBB)                 | ND                |
| Tribrominated Biphenyls (TriBB)               | ND                |
| Tetrabrominated Biphenyls (TetraBB)           | ND                |
| Pentabrominated Biphenyls (PentaBB)           | ND                |
| Hexabrominated Biphenyls (HexaBB)             | ND                |
| Heptabrominated Biphenyls (HeptaBB)           | ND                |
| Octabrominated Biphenyls (OctaBB)             | ND                |
| Nonabrominated Biphenyls (NonaBB)             | ND                |
| Decabrominated Biphenyl (DecaBB)              | ND                |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |                   |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND                |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND                |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND                |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND                |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND                |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND                |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND                |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND                |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND                |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND                |
| <b>Halogen Content</b>                        |                   |
| Fluorine (F)                                  | ND                |
| Chlorine (Cl)                                 | ND                |
| Bromine (Br)                                  | ND                |
| Iodine (I)                                    | ND                |

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg  
ND = Not detected

Responsibility of Chemist : Irene Chiou / Kevin Liu / Cathy Chen

Date Sample Received : Nov 17, 2011  
Test Period : Nov 18, 2011 To Nov 22, 2011

## Test Conducted

## ( II ) RoHS Requirement:

| Restricted Substances                   | Limits         |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

## ( III ) Test Method:

| Test Item                               | Test Method                                                                                                                                                     | Reporting Limit |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm           |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm           |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm           |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm           |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm           |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm           |
| Halogen Content                         | With reference to EN 14582:2007 by calorimetric bomb with oxygen and determined by ion chromatography                                                           | 50 ppm          |

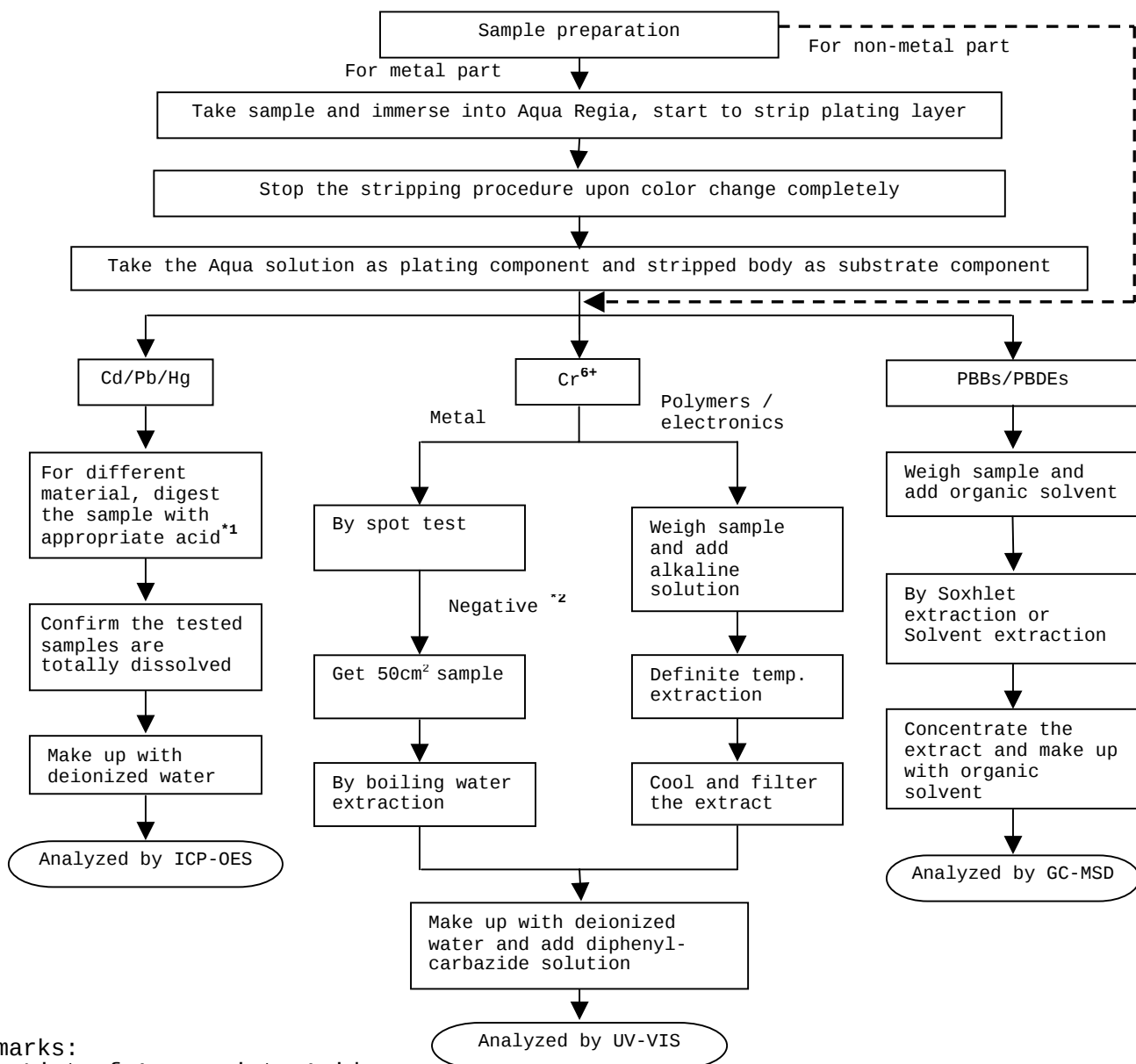
Remark: Reporting limit = Quantitation limit of analyte in sample

## Test Conducted

## (IV) Measurement Flowchart:

Test for Cd/Pb/Hg/Chromium (VI)/PBBS/PBDES Contents

Reference Standard: IEC 62321 edition 1.0:2008



## Remarks:

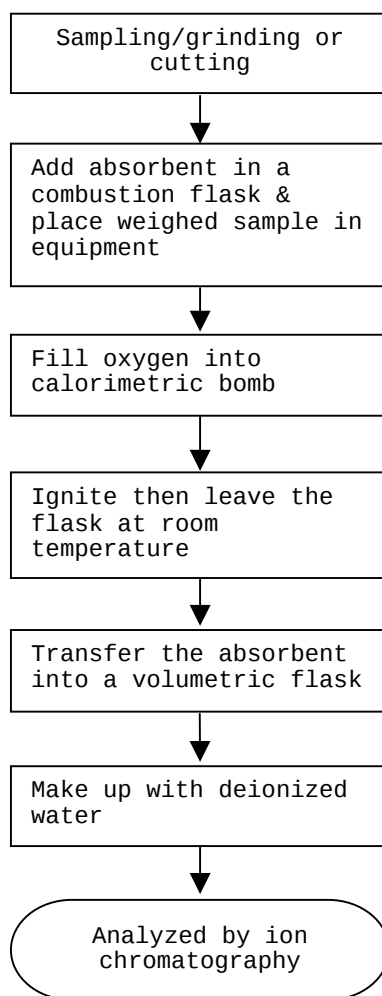
## \*1: List of Appropriate Acid :

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

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

Test Conducted  
(IV) Measurement Flowchart:

Test for Halogen Content  
Reference Standard : EN 14582



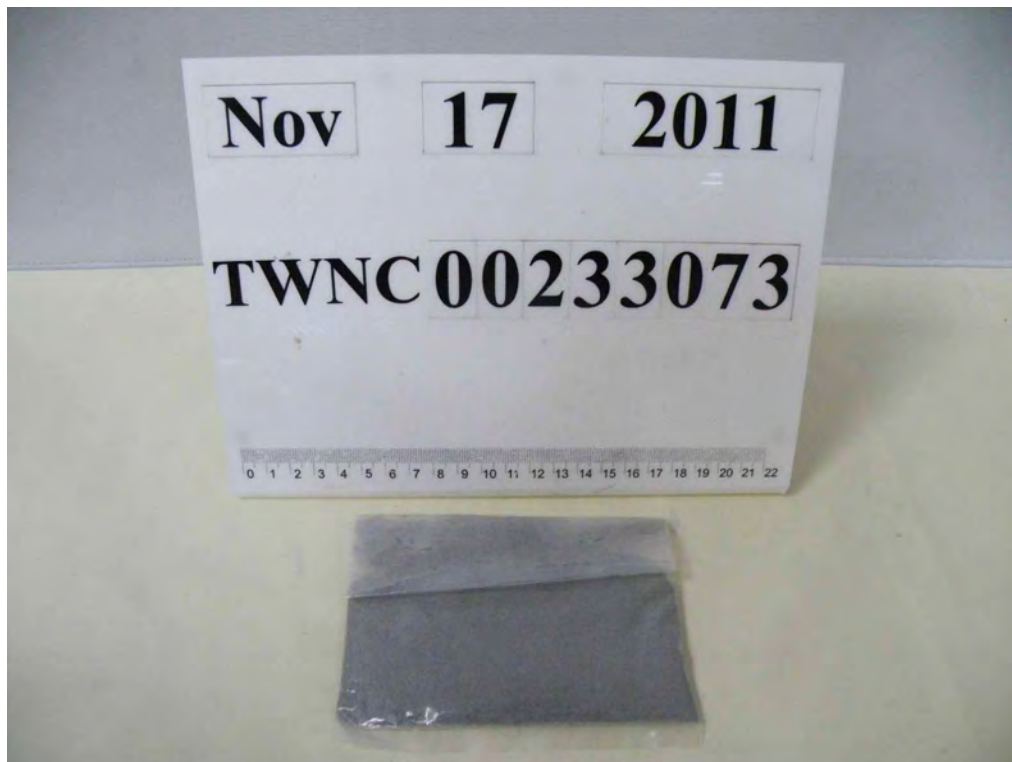
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End of Report

Test Conducted

Number : TWNC00233073

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**TEST REPORT**

NUMBER: SHAH00296139

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: DEC 20, 2011

**SAMPLE DESCRIPTION:**

One(1) submitted sample said to be **Sand**.

Part Description : Sand.

Part Number : 091254.

Date Sample Received : Dec.14, 2011.

Date Test Started : Dec.14, 2011.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

TO BE CONTINUED

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00296139

## TESTS CONDUCTED

## 1 (I) Test Result Summary :

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

Remarks: ppm = Parts per million based on weight of tested sample =  
mg/kg  
ND = Not detected

Responsibility Of Chemist : Ken He

## (II) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample

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TO BE CONTINUED

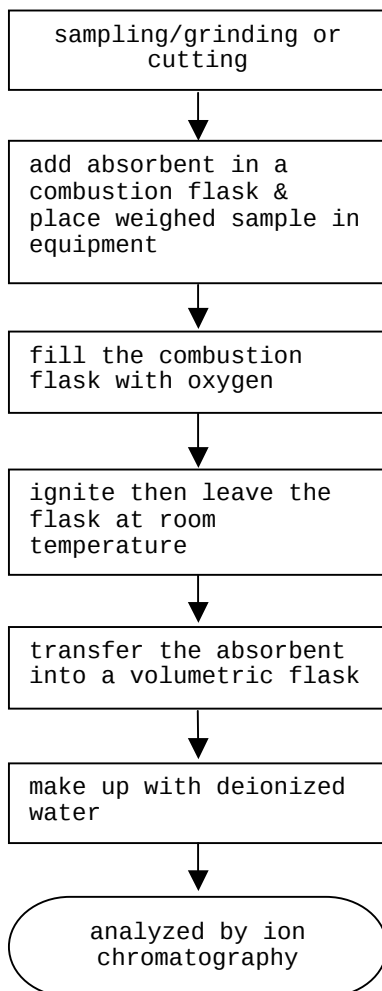
**TEST REPORT**

NUMBER: SHAH00296139

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00296139

TESTS CONDUCTED

2 (I) Test Result Summary :

| <u>Testing Item</u>                           | <u>Result (ppm)</u> |
|-----------------------------------------------|---------------------|
| <b>Heavy Metal</b>                            |                     |
| Cadmium (Cd) content                          | ND                  |
| Lead (Pb) content                             | ND                  |
| Mercury (Hg) content                          | ND                  |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND                  |
| <b>Polybrominated Biphenyls (PBBs)</b>        |                     |
| Monobrominated Biphenyls (MonoBB)             | ND                  |
| Dibrominated Biphenyls (DiBB)                 | ND                  |
| Tribrominated Biphenyls (TriBB)               | ND                  |
| Tetrabrominated Biphenyls (TetraBB)           | ND                  |
| Pentabrominated Biphenyls (PentaBB)           | ND                  |
| Hexabrominated Biphenyls (HexaBB)             | ND                  |
| Heptabrominated Biphenyls (HeptaBB)           | ND                  |
| Octabrominated Biphenyls (OctaBB)             | ND                  |
| Nonabrominated Biphenyls (NonaBB)             | ND                  |
| Decabrominated Biphenyl (DecaBB)              | ND                  |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |                     |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND                  |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND                  |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND                  |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND                  |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND                  |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND                  |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND                  |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND                  |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND                  |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND                  |

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00296139

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist : Dent Fang / Ken He

(II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00296139

TESTS CONDUCTED  
(III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                  |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm                  |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |

Remark: Reporting limit = Quantitation limit of analyte in sample

DATE SAMPLE RECEIVED : DEC.14, 2011

TESTING PERIOD : DEC.14, 2011 TO DEC.19, 2011

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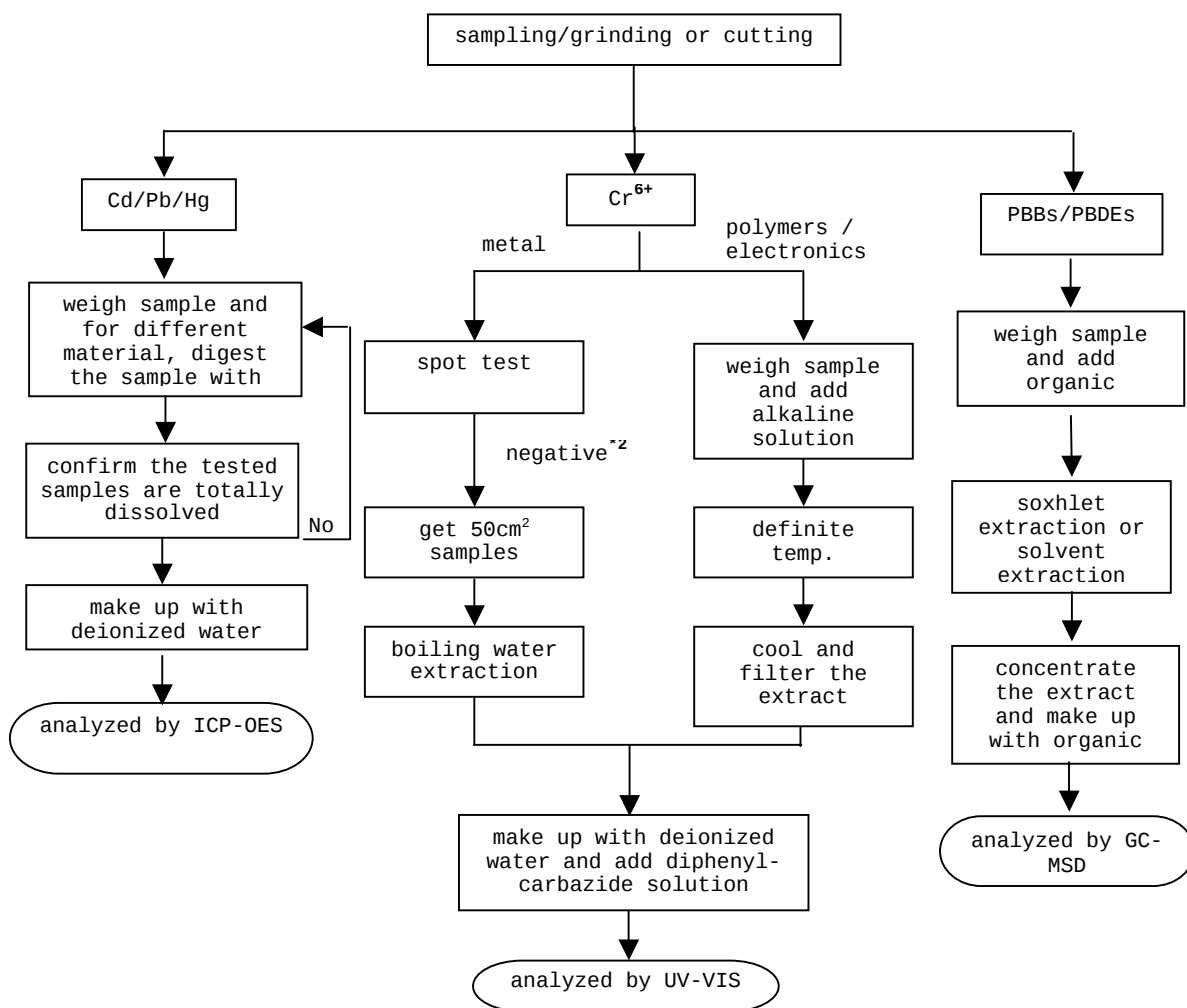
TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00296139

### TESTS CONDUCTED (IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
Reference Standard: IEC 62321 edition 1.0:2008



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TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00296139

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

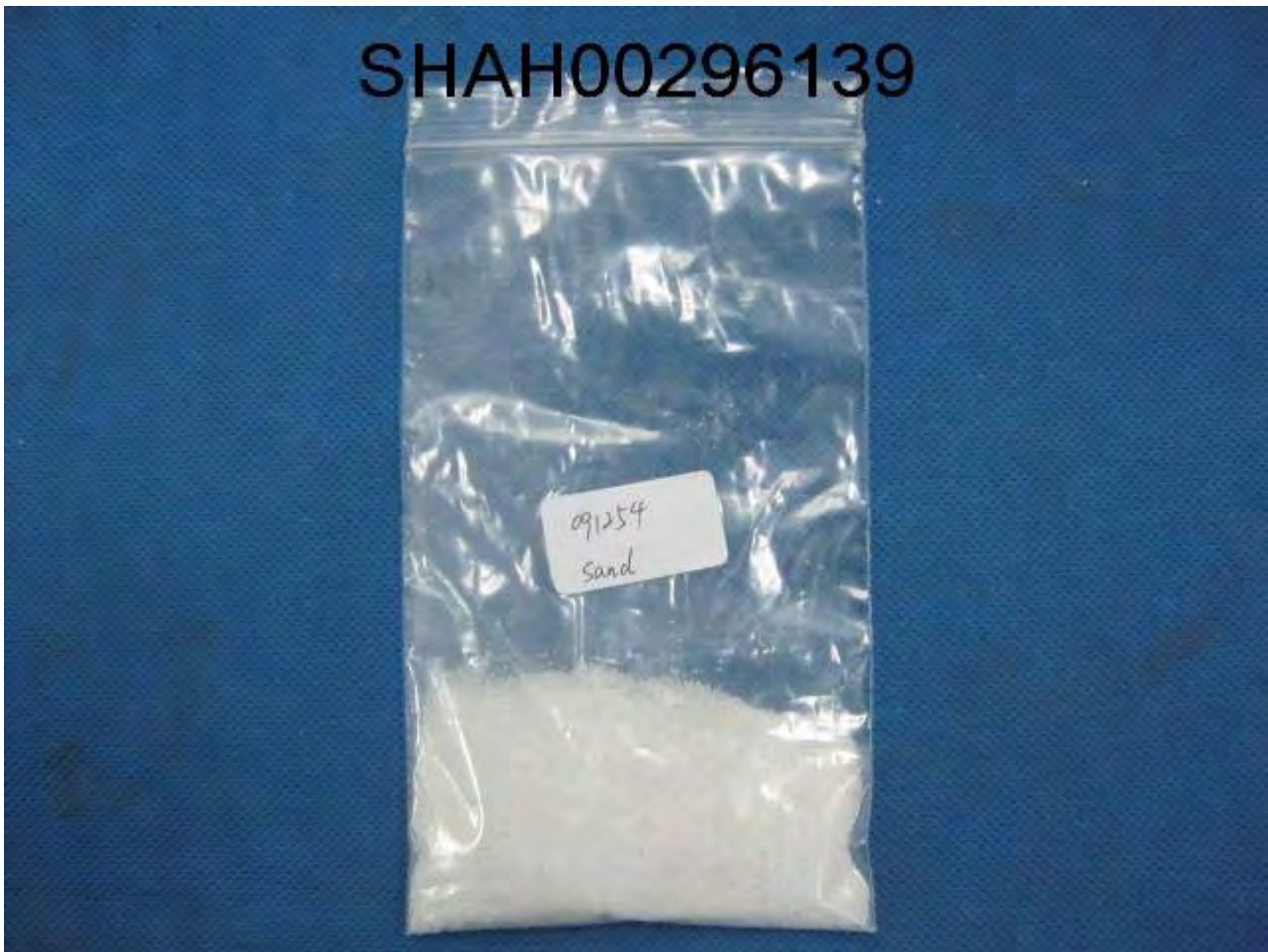
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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00296139

TESTS CONDUCTED



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END OF REPORT



**TEST REPORT**

NUMBER: SHAH00287567

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: NOV 01, 2011

**SAMPLE DESCRIPTION:**

One (1) submitted sample said to be **Orange ink.**

Part Description : Ink - orange.

Part Number : 425900.

Date Sample Received : Oct.25, 2011.

Date Test Started : Oct.25, 2011.

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**TESTS CONDUCTED:**

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

\*\*\*\*\*

TO BE CONTINUED

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00287567

TESTS CONDUCTED

1 PHTHALATE CONTENT TEST

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

| <u>TESTED COMPOUND</u>             | <u>RESULT (% W/W)</u> | <u>LIMIT (% W/W)</u><br><u>(MAX.)</u> |
|------------------------------------|-----------------------|---------------------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND                    | ---                                   |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND                    | ---                                   |
| BENZYL BUTYL PHTHALATE (BBP)       | ND                    | ---                                   |
| SUM OF THREE PHTHALATES            | ND                    | 0.1                                   |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII  
 ITEMS 51 & 52 OF THE REACH REGULATION (EC) NO. 1907/2006  
 & AMENDMENT NO. 552/2009 (FORMERLY KNOWN AS DIRECTIVE  
 2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN  
 CARE ARTICLES.

DETECTION LIMIT = 0.01% (W/W)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE

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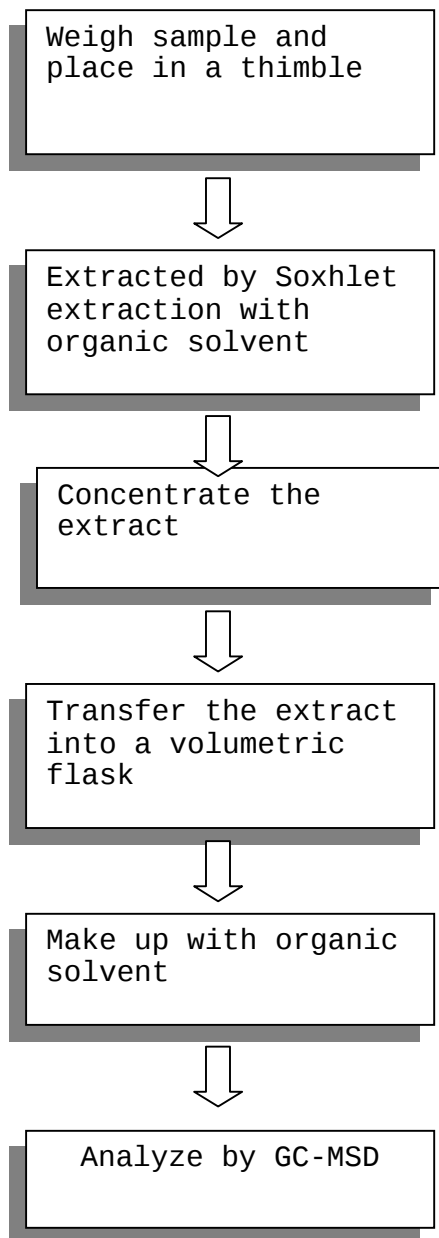
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287567

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287567

TESTS CONDUCTED

2 (I) Test Result Summary :

| <u>Testing Item</u>    | <u>Result (ppm)</u> |
|------------------------|---------------------|
| <b>Halogen Content</b> |                     |
| Fluorine (F)           | ND                  |
| Chlorine (Cl)          | 14500               |
| Bromine (Br)           | ND                  |
| Iodine (I)             | ND                  |

Remarks: ppm = Parts per million based on weight of tested sample =  
 mg/kg  
 ND = Not detected

Responsibility Of Chemist : Ken He

(II) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*  
 TO BE CONTINUED

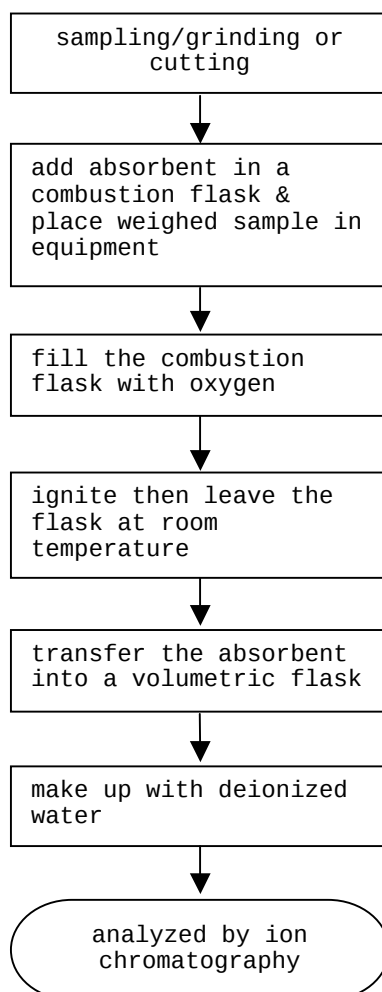
**TEST REPORT**

NUMBER: SHAH00287567

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



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TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00287567

### TESTS CONDUCTED

#### 3 (I) Test Result Summary :

| Testing Item                                  | Result (ppm) |
|-----------------------------------------------|--------------|
| <b>Heavy Metal</b>                            |              |
| Cadmium (Cd) content                          | ND           |
| Lead (Pb) content                             | ND           |
| Mercury (Hg) content                          | ND           |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND           |
| <b>Polybrominated Biphenyls (PBBs)</b>        |              |
| Monobrominated Biphenyls (MonoBB)             | ND           |
| Dibrominated Biphenyls (DiBB)                 | ND           |
| Tribrominated Biphenyls (TriBB)               | ND           |
| Tetrabrominated Biphenyls (TetraBB)           | ND           |
| Pentabrominated Biphenyls (PentaBB)           | ND           |
| Hexabrominated Biphenyls (HexaBB)             | ND           |
| Heptabrominated Biphenyls (HeptaBB)           | ND           |
| Octabrominated Biphenyls (OctaBB)             | ND           |
| Nonabrominated Biphenyls (NonaBB)             | ND           |
| Decabrominated Biphenyl (DecaBB)              | ND           |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |              |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND           |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND           |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND           |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND           |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND           |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND           |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND           |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND           |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND           |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND           |

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287567

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist : Dent Fang / Ken He

(II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287567

TESTS CONDUCTED

(III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                  |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm                  |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

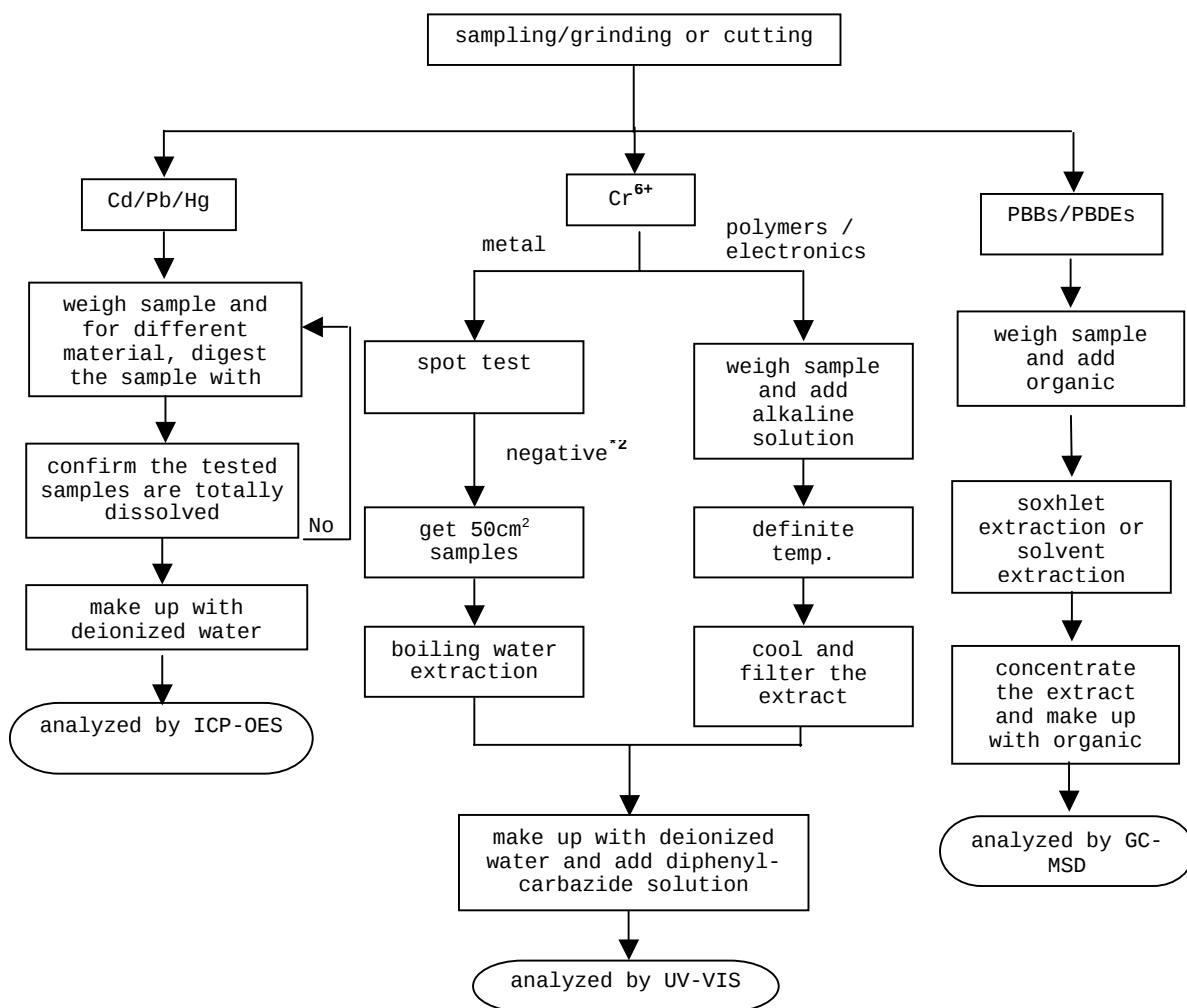
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287567

TESTS CONDUCTED  
 (IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
 Reference Standard: IEC 62321 edition 1.0:2008



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TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287567

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287567

TESTS CONDUCTED

4 PHthalate Content Test

WITH REFERENCE TO ASTM D3421, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

|                                    | RESULT (% , w/w) | LIMIT (% , w/w)<br>(MAX.) |
|------------------------------------|------------------|---------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND               | 0.1                       |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND               | 0.1                       |
| BENZYL BUTYL PHTHALATE (BBP)       | ND               | 0.1                       |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER PRODUCT SAFETY IMPROVEMENT ACT 2008 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01% (w/w)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE

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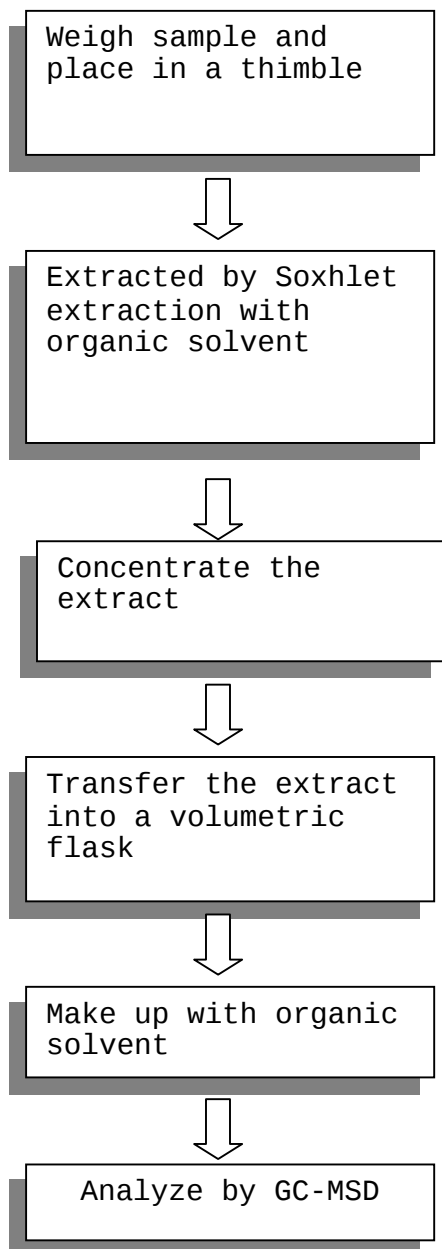
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287567

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287567

TESTS CONDUCTED

5 (A) TEST RESULT SUMMARY:

| <u>TESTING ITEM</u>            | <u>RESULT (ppm)</u> |
|--------------------------------|---------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | ND                  |

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

| <u>TESTING ITEM</u>            | <u>TESTING METHOD</u>                                                        | <u>REPORTING LIMIT</u> |
|--------------------------------|------------------------------------------------------------------------------|------------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS | 10 ppm                 |

DATE SAMPLE RECEIVED : OCT.25, 2011

TESTING PERIOD : OCT.25, 2011 TO OCT.31, 2011

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TO BE CONTINUED

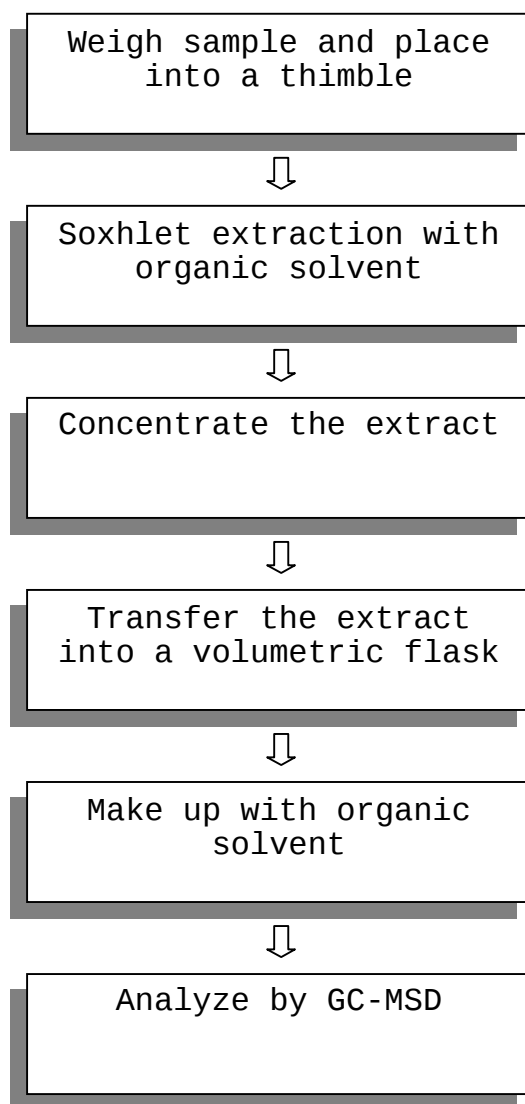
**TEST REPORT**

NUMBER: SHAH00287567

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCDD (Hexabromocyclododecane) CONTENT



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287567

**TESTS CONDUCTED**



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END OF REPORT



**TEST REPORT**

NUMBER: SHAH00287553

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: NOV 01, 2011

**SAMPLE DESCRIPTION:**

One (1) submitted sample said to be: **Red ink.**

Part Description : Ink - red.

Part Number : 425901.

Date Sample Received : Oct.25, 2011.

Date Test Started : Oct.25, 2011.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

TO BE CONTINUED

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00287553

TESTS CONDUCTED

1 PHTHALATE CONTENT TEST

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

| <u>TESTED COMPOUND</u>             | <u>RESULT (% ,W/W)</u> | <u>LIMIT (% ,W/W)</u><br><u>(MAX. )</u> |
|------------------------------------|------------------------|-----------------------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND                     | ---                                     |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND                     | ---                                     |
| BENZYL BUTYL PHTHALATE (BBP)       | ND                     | ---                                     |
| SUM OF THREE PHTHALATES            | ND                     | 0.1                                     |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII  
ITEMS 51 & 52 OF THE REACH REGULATION (EC) NO. 1907/2006  
& AMENDMENT NO.552/2009 (FORMERLY KNOWN AS DIRECTIVE  
2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN  
CARE ARTICLES.

DETECTION LIMIT = 0.01%(W/W)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE/COMPONENT

\*\*\*\*\*

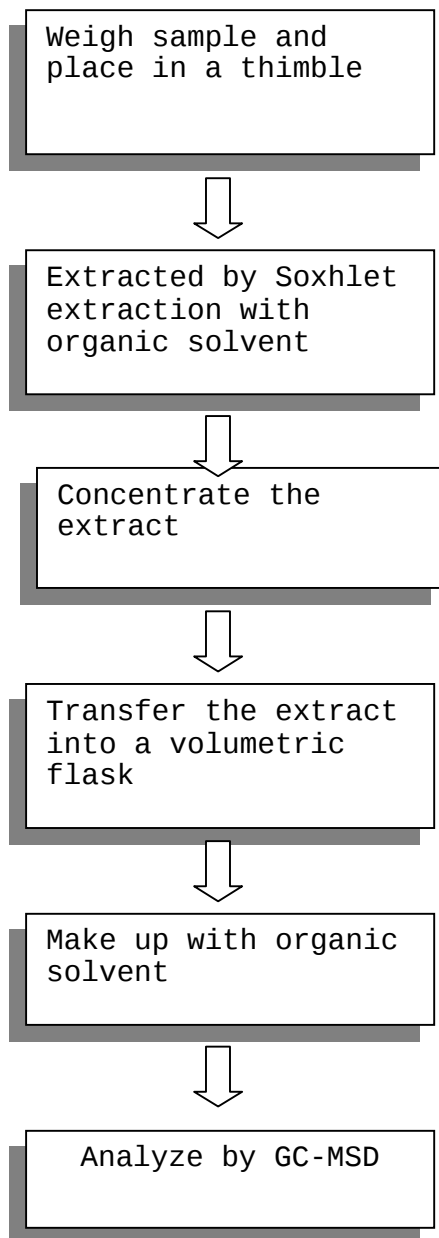
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287553

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287553

TESTS CONDUCTED

2 (I) Test Result Summary :

| <u>Testing Item</u>    | <u>Result (ppm)</u> |
|------------------------|---------------------|
| <b>Halogen Content</b> |                     |
| Fluorine (F)           | ND                  |
| Chlorine (Cl)          | 720                 |
| Bromine (Br)           | ND                  |
| Iodine (I)             | ND                  |

Remarks: ppm = Parts per million based on weight of tested sample =  
mg/kg  
ND = Not detected

Responsibility Of Chemist : Ken He

(II) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

TO BE CONTINUED

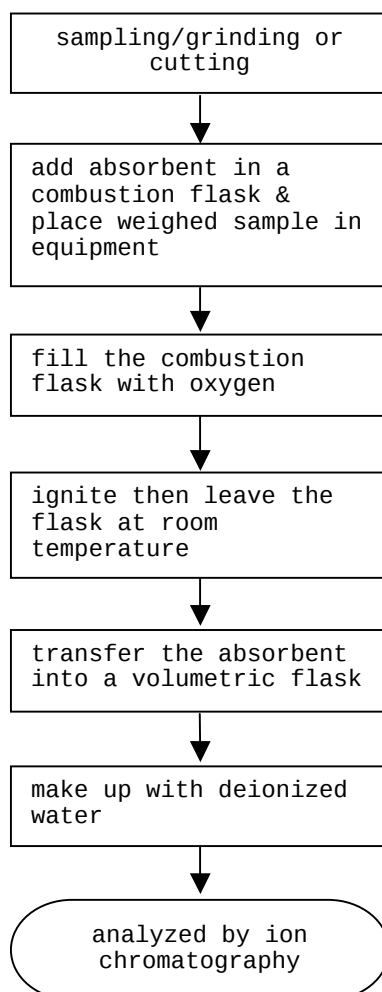
**TEST REPORT**

NUMBER: SHAH00287553

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



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TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00287553

### TESTS CONDUCTED

#### 3 (I) Test Result Summary :

| <u>Testing Item</u>                           | <u>Result (ppm)</u> |
|-----------------------------------------------|---------------------|
| <b>Heavy Metal</b>                            |                     |
| Cadmium (Cd) content                          | ND                  |
| Lead (Pb) content                             | ND                  |
| Mercury (Hg) content                          | ND                  |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND                  |
| <b>Polybrominated Biphenyls (PBBs)</b>        |                     |
| Monobrominated Biphenyls (MonoBB)             | ND                  |
| Dibrominated Biphenyls (DiBB)                 | ND                  |
| Tribrominated Biphenyls (TriBB)               | ND                  |
| Tetrabrominated Biphenyls (TetraBB)           | ND                  |
| Pentabrominated Biphenyls (PentaBB)           | ND                  |
| Hexabrominated Biphenyls (HexaBB)             | ND                  |
| Heptabrominated Biphenyls (HeptaBB)           | ND                  |
| Octabrominated Biphenyls (OctaBB)             | ND                  |
| Nonabrominated Biphenyls (NonaBB)             | ND                  |
| Decabrominated Biphenyl (DecaBB)              | ND                  |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |                     |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND                  |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND                  |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND                  |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND                  |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND                  |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND                  |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND                  |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND                  |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND                  |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND                  |

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287553

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist : Dent Fang / Ken He

(II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

\*\*\*\*\*

TO BE CONTINUED

# TEST REPORT

NUMBER: SHAH00287553

## TESTS CONDUCTED

### (III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                  |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm                  |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

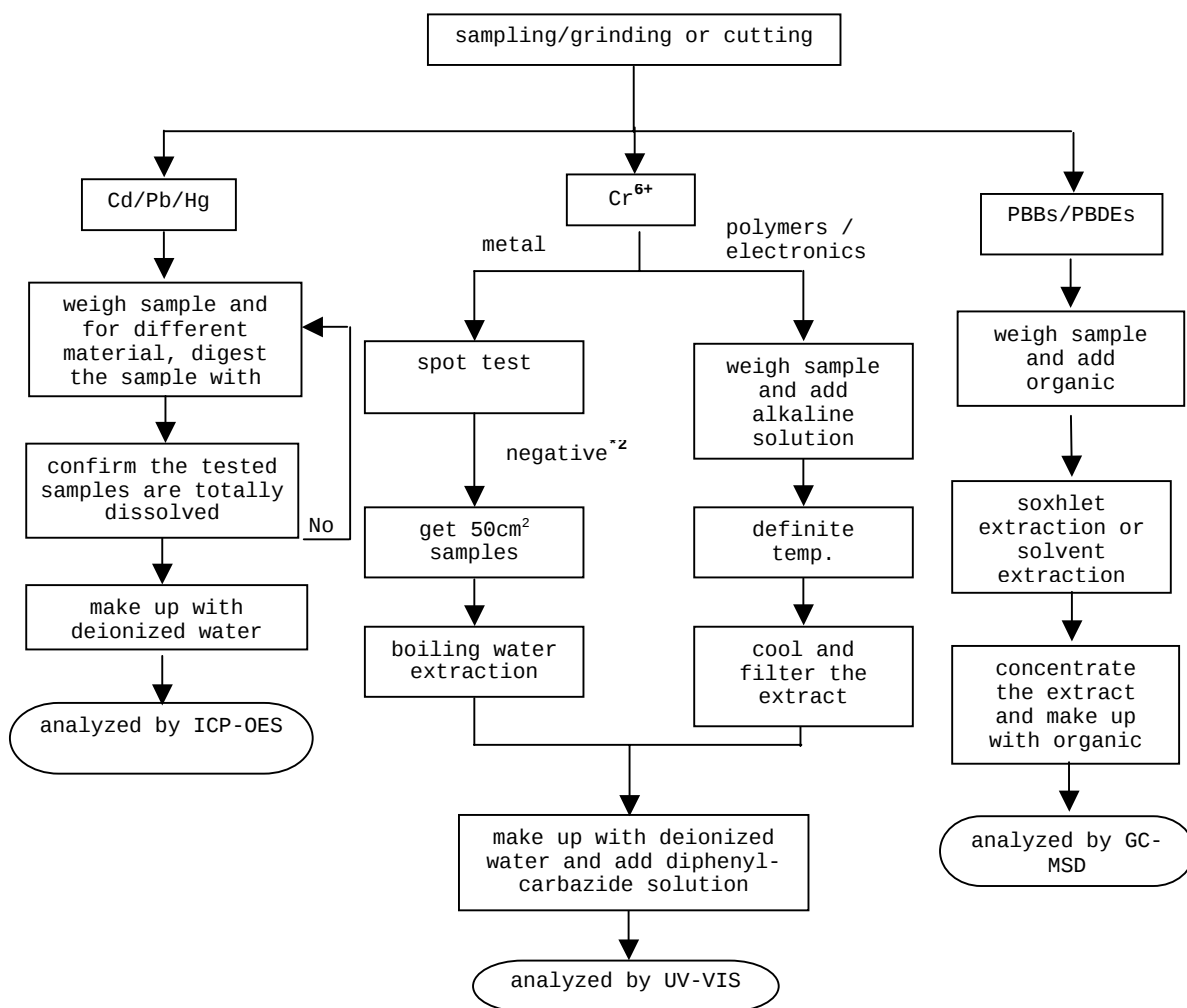
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287553

TESTS CONDUCTED  
 (IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
 Reference Standard: IEC 62321 edition 1.0:2008



\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287553

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287553

TESTS CONDUCTED

4 PHthalate Content Test

WITH REFERENCE TO ASTM D3421, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

|                                    | RESULT (% , w/w) | LIMIT (% , w/w)<br>(MAX.) |
|------------------------------------|------------------|---------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND               | 0.1                       |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND               | 0.1                       |
| BENZYL BUTYL PHTHALATE (BBP)       | ND               | 0.1                       |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER PRODUCT SAFETY IMPROVEMENT ACT 2008 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01% (w/w)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE/COMPONENT.

\*\*\*\*\*

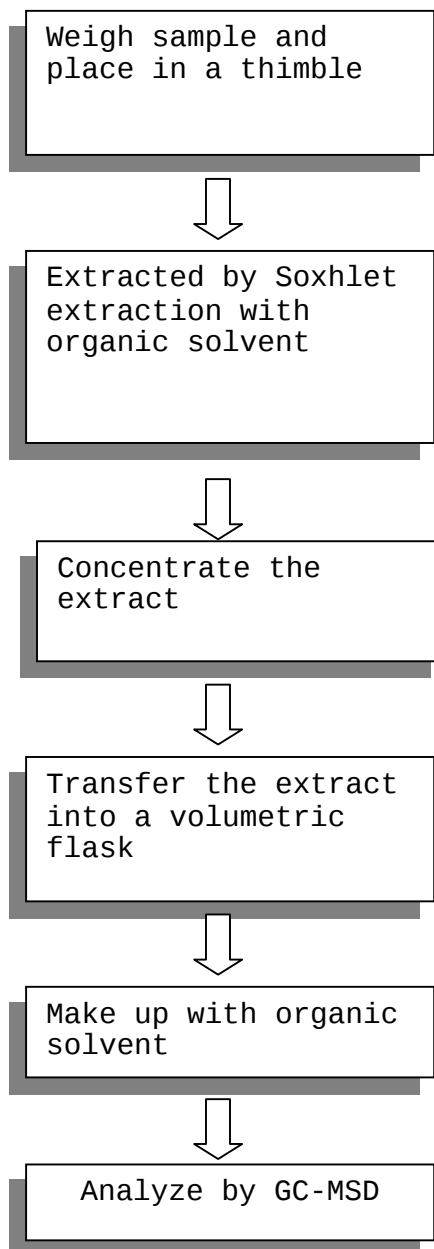
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287553

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



\*\*\*\*\*  
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287553

TESTS CONDUCTED  
 5 (A) TEST RESULT SUMMARY:

| <u>TESTING ITEM</u>            | <u>RESULT (ppm)</u> |
|--------------------------------|---------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | ND                  |

REMARKS:

ppm = PARTS PER MILLION = mg/kg  
 ND = NOT DETECTED

(B) TEST METHOD :

| <u>TESTING ITEM</u>            | <u>TESTING METHOD</u>                                                        | <u>REPORTING LIMIT</u> |
|--------------------------------|------------------------------------------------------------------------------|------------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS | 10 ppm                 |

DATE SAMPLE RECEIVED : OCT.25, 2011

TESTING PERIOD : OCT.25, 2011 TO OCT.31, 2011

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TO BE CONTINUED

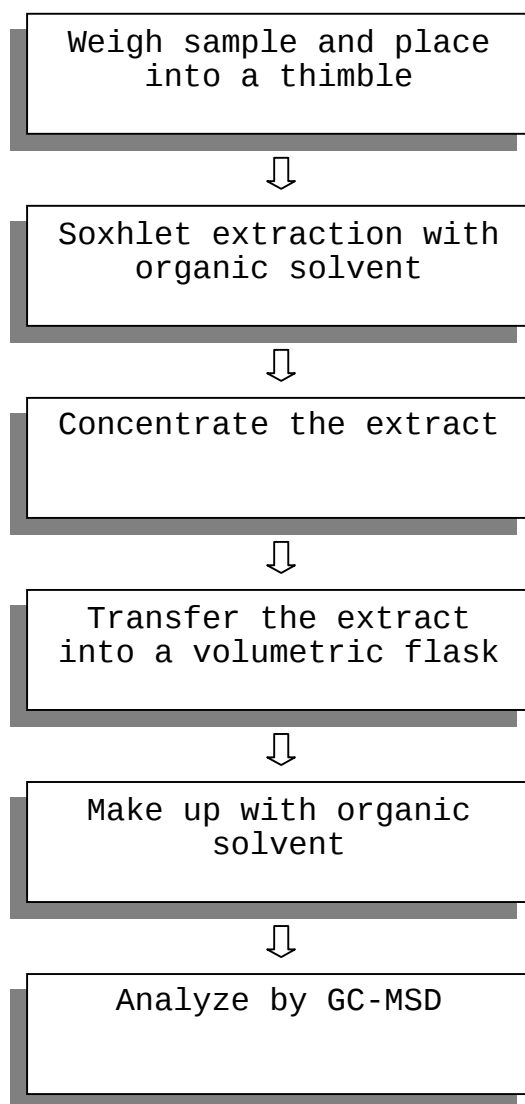
**TEST REPORT**

NUMBER: SHAH00287553

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCDD (Hexabromocyclododecane) CONTENT



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287553

**TESTS CONDUCTED**



\*\*\*\*\*

END OF REPORT



**TEST REPORT**

NUMBER: SHAH00287569

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: OCT 31, 2011

**SAMPLE DESCRIPTION:**

One (1) submitted sample said to be **Black ink.**

Part Description : Ink - black.

Part Number : 425902.

Date Sample Received : Oct.25, 2011.

Date Test Started : Oct.25, 2011.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

TO BE CONTINUED

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00287569

TESTS CONDUCTED

1 PHTHALATE CONTENT TEST

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

| <u>TESTED COMPOUND</u>             | <u>RESULT (% W/W)</u> | <u>LIMIT (% W/W)</u><br><u>(MAX.)</u> |
|------------------------------------|-----------------------|---------------------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND                    | ---                                   |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND                    | ---                                   |
| BENZYL BUTYL PHTHALATE (BBP)       | ND                    | ---                                   |
| SUM OF THREE PHTHALATES            | ND                    | 0.1                                   |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII  
 ITEMS 51 & 52 OF THE REACH REGULATION (EC) NO. 1907/2006  
 & AMENDMENT NO. 552/2009 (FORMERLY KNOWN AS DIRECTIVE  
 2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN  
 CARE ARTICLES.

DETECTION LIMIT = 0.01% (W/W)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE/COMPONENT

\*\*\*\*\*

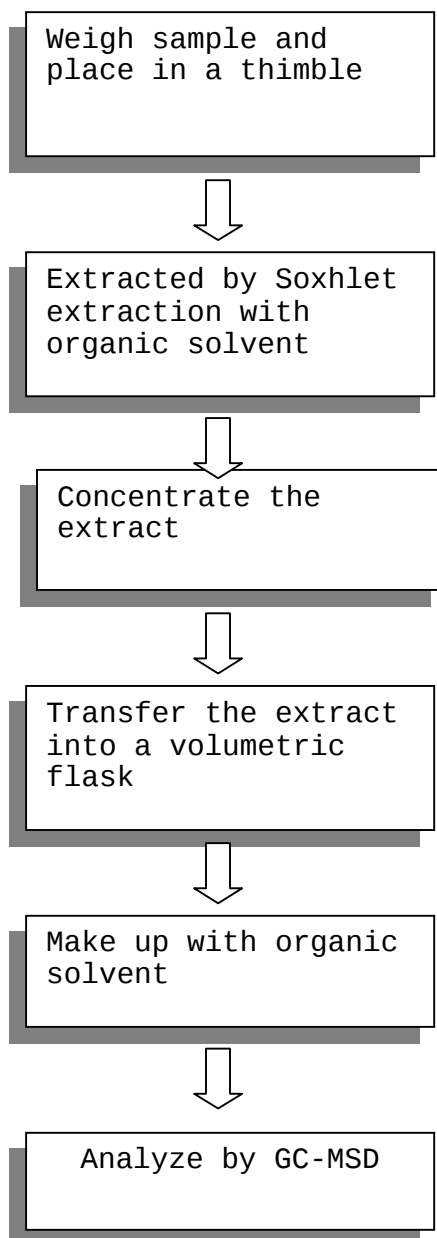
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287569

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287569

TESTS CONDUCTED

2 (I) Test Result Summary :

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

Remarks: ppm = Parts per million based on weight of tested sample =  
 mg/kg  
 ND = Not detected

Responsibility Of Chemist : Ken He

(II) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

TO BE CONTINUED

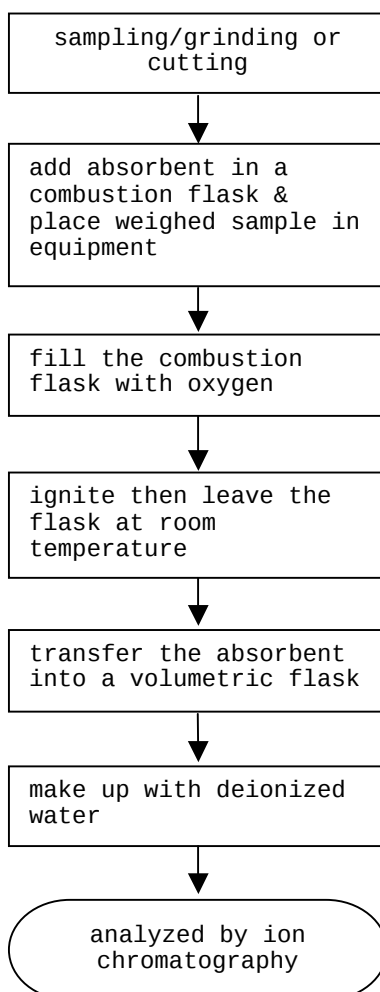
**TEST REPORT**

NUMBER: SHAH00287569

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



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TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00287569

### TESTS CONDUCTED

#### 3 (I) Test Result Summary :

| <u>Testing Item</u>                           | <u>Result (ppm)</u> |
|-----------------------------------------------|---------------------|
| <b>Heavy Metal</b>                            |                     |
| Cadmium (Cd) content                          | ND                  |
| Lead (Pb) content                             | ND                  |
| Mercury (Hg) content                          | ND                  |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND                  |
| <b>Polybrominated Biphenyls (PBBs)</b>        |                     |
| Monobrominated Biphenyls (MonoBB)             | ND                  |
| Dibrominated Biphenyls (DiBB)                 | ND                  |
| Tribrominated Biphenyls (TriBB)               | ND                  |
| Tetrabrominated Biphenyls (TetraBB)           | ND                  |
| Pentabrominated Biphenyls (PentaBB)           | ND                  |
| Hexabrominated Biphenyls (HexaBB)             | ND                  |
| Heptabrominated Biphenyls (HeptaBB)           | ND                  |
| Octabrominated Biphenyls (OctaBB)             | ND                  |
| Nonabrominated Biphenyls (NonaBB)             | ND                  |
| Decabrominated Biphenyl (DecaBB)              | ND                  |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |                     |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND                  |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND                  |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND                  |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND                  |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND                  |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND                  |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND                  |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND                  |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND                  |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND                  |

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287569

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist :Dent Fang / Ken He

(II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ehters (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287569

TESTS CONDUCTED

(III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                  |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm                  |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

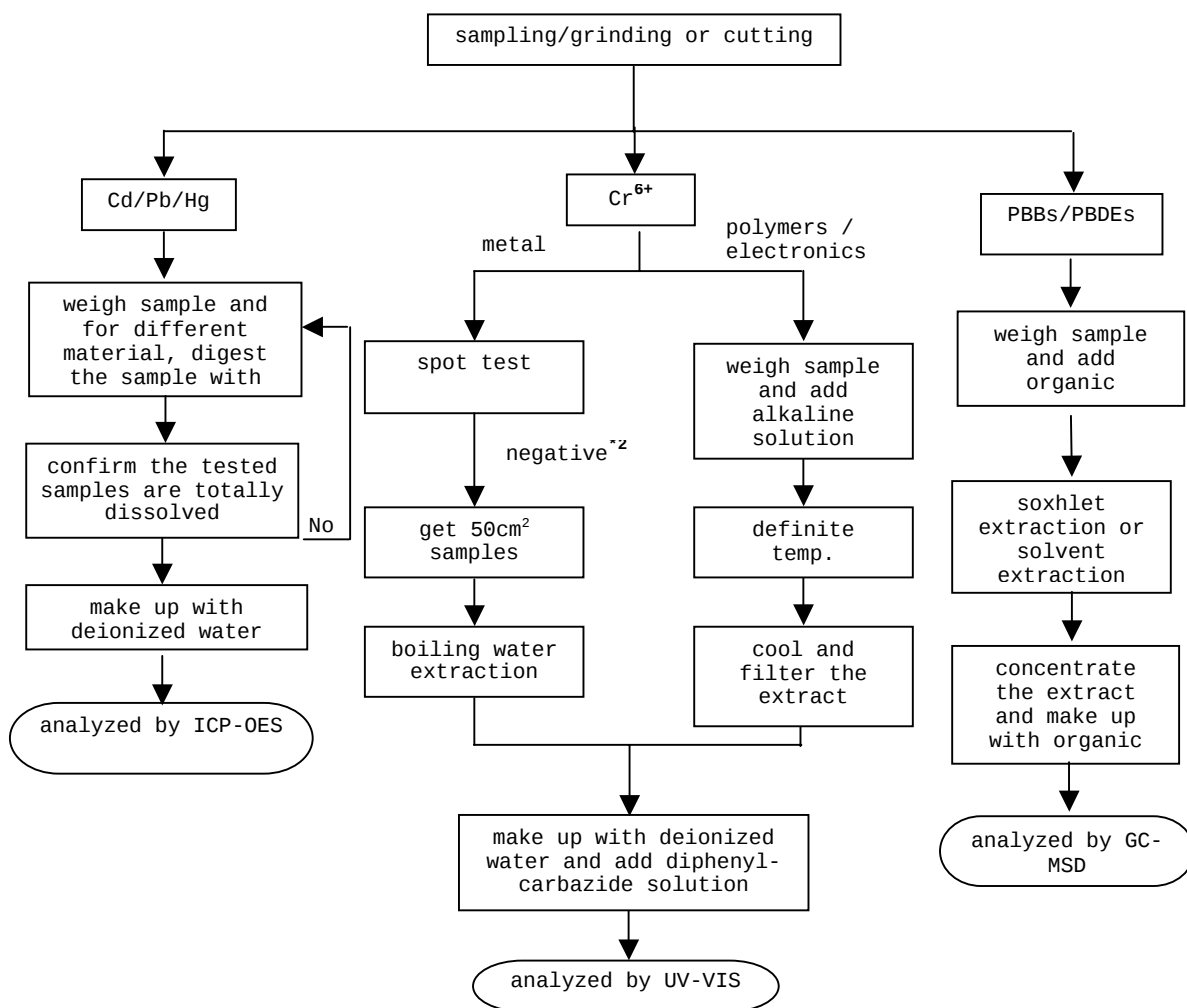
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287569

TESTS CONDUCTED  
 (IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
 Reference Standard: IEC 62321 edition 1.0:2008



\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287569

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287569

TESTS CONDUCTED

4 PHthalate Content Test

WITH REFERENCE TO ASTM D3421, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

|                                    | RESULT (% , w/w) | LIMIT (% , w/w)<br>(MAX. ) |
|------------------------------------|------------------|----------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND               | 0.1                        |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND               | 0.1                        |
| BENZYL BUTYL PHTHALATE (BBP)       | ND               | 0.1                        |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER PRODUCT SAFETY IMPROVEMENT ACT 2008 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01% (w/w)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE/COMPONENT.

\*\*\*\*\*

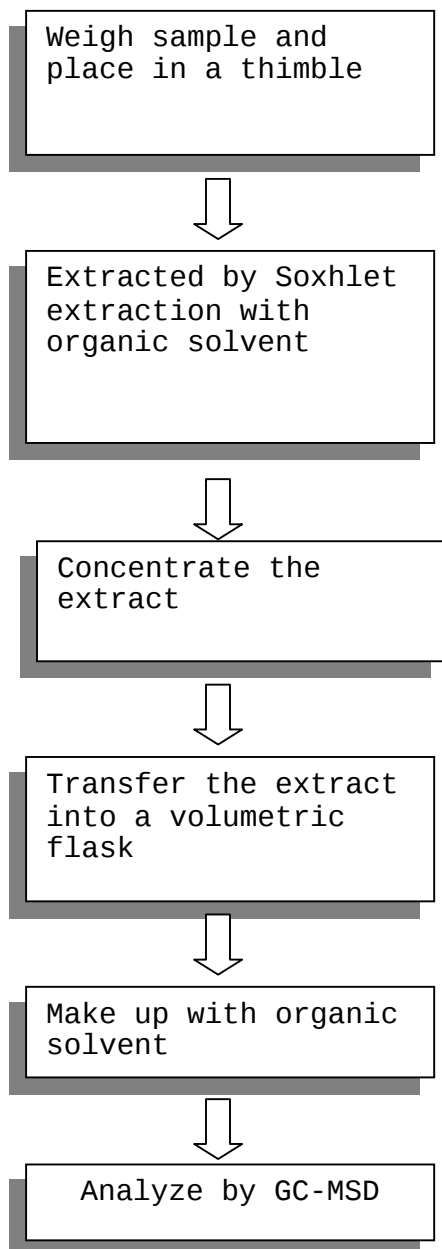
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287569

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



\*\*\*\*\*  
TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287569

TESTS CONDUCTED

5 (A) TEST RESULT SUMMARY:

| <u>TESTING ITEM</u>            | <u>RESULT (ppm)</u> |
|--------------------------------|---------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | ND                  |

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

| <u>TESTING ITEM</u>            | <u>TESTING METHOD</u>                                                        | <u>REPORTING LIMIT</u> |
|--------------------------------|------------------------------------------------------------------------------|------------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS | 10 ppm                 |

DATE SAMPLE RECEIVED : OCT.25, 2011

TESTING PERIOD : OCT.25, 2011 TO OCT.28, 2011

\*\*\*\*\*

TO BE CONTINUED

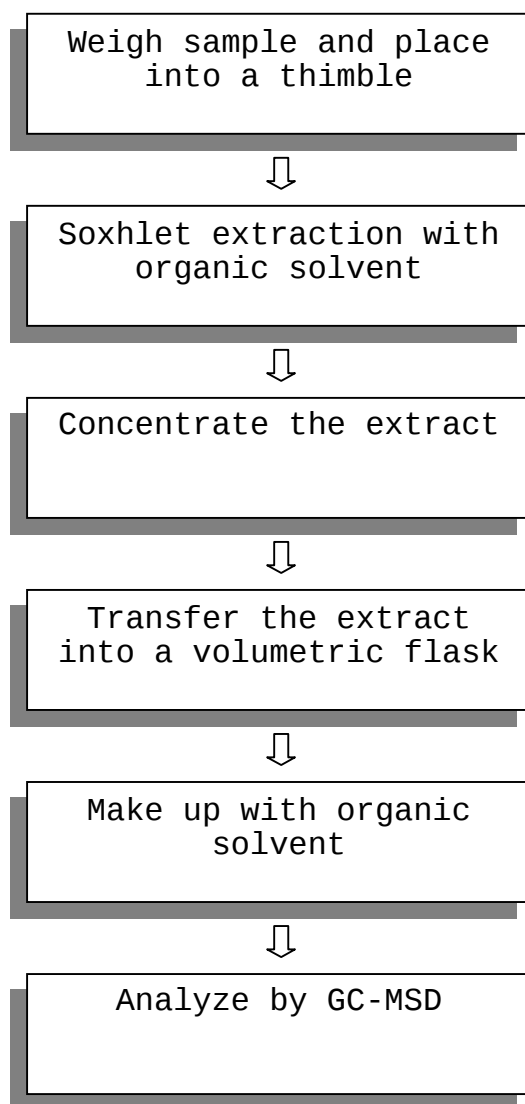
**TEST REPORT**

NUMBER: SHAH00287569

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCDD (Hexabromocyclododecane) CONTENT



\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287569

**TESTS CONDUCTED**



\*\*\*\*\*

END OF REPORT



**TEST REPORT**

NUMBER: SHAH00287564

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: OCT 31, 2011

**SAMPLE DESCRIPTION:**

One (1) submitted sample said to be **Yellow ink.**

Part Description : Ink - yellow.

Part Number : 425903.

Date Sample Received : Oct.25, 2011.

Date Test Started : Oct.25, 2011.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

TO BE CONTINUED

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00287564

TESTS CONDUCTED

1 PHTHALATE CONTENT TEST

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

| <u>TESTED COMPOUND</u>             | <u>RESULT (% W/W)</u> | <u>LIMIT (% W/W)</u><br><u>(MAX.)</u> |
|------------------------------------|-----------------------|---------------------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND                    | ---                                   |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND                    | ---                                   |
| BENZYL BUTYL PHTHALATE (BBP)       | ND                    | ---                                   |
| SUM OF THREE PHTHALATES            | ND                    | 0.1                                   |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII  
 ITEMS 51 & 52 OF THE REACH REGULATION (EC) NO. 1907/2006  
 & AMENDMENT NO. 552/2009 (FORMERLY KNOWN AS DIRECTIVE  
 2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN  
 CARE ARTICLES.

DETECTION LIMIT = 0.01% (W/W)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE/COMPONENT

\*\*\*\*\*

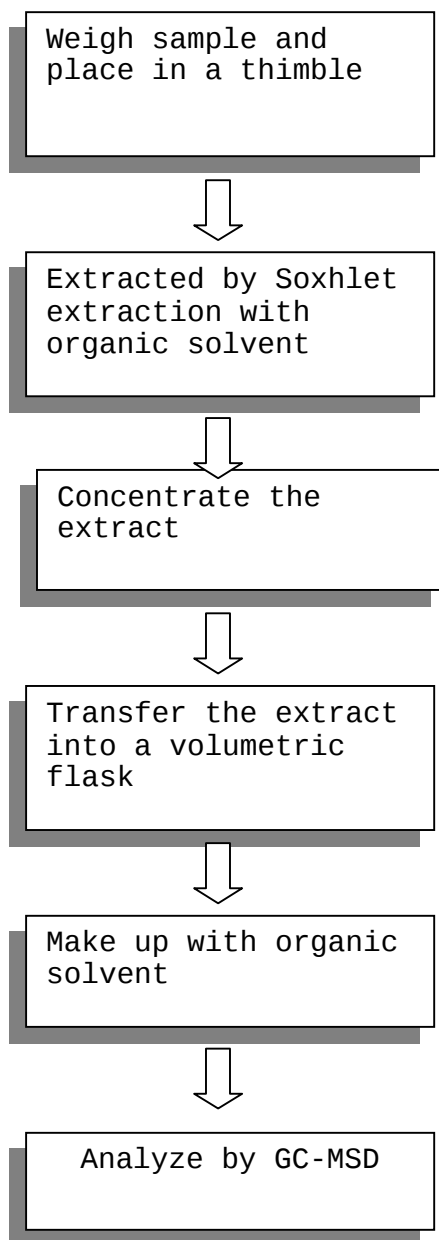
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287564

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287564

TESTS CONDUCTED

2 (I) Test Result Summary :

| <u>Testing Item</u>    | <u>Result (ppm)</u> |
|------------------------|---------------------|
| <b>Halogen Content</b> |                     |
| Fluorine (F)           | ND                  |
| Chlorine (Cl)          | 5350                |
| Bromine (Br)           | ND                  |
| Iodine (I)             | ND                  |

Remarks: ppm = Parts per million based on weight of tested sample =  
mg/kg  
ND = Not detected

Responsibility Of Chemist : Ken He

(II) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

TO BE CONTINUED

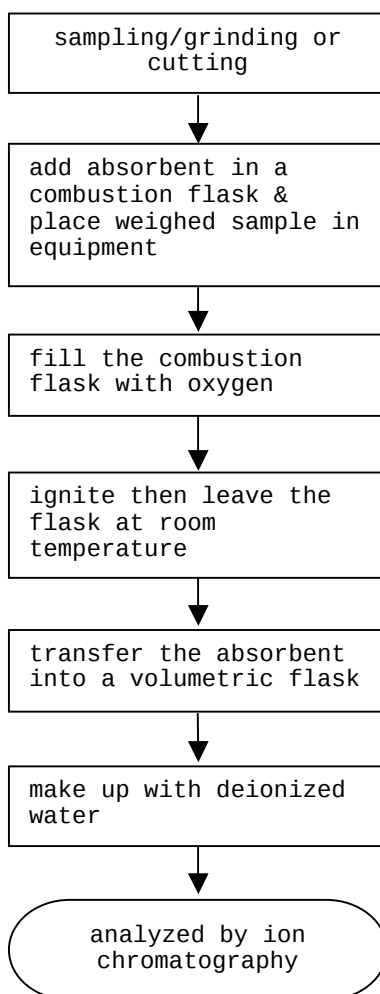
**TEST REPORT**

NUMBER: SHAH00287564

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



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TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00287564

### TESTS CONDUCTED

#### 3 (I) Test Result Summary :

| Testing Item                                  | Result (ppm) |
|-----------------------------------------------|--------------|
| <b>Heavy Metal</b>                            |              |
| Cadmium (Cd) content                          | ND           |
| Lead (Pb) content                             | ND           |
| Mercury (Hg) content                          | ND           |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND           |
| <b>Polybrominated Biphenyls (PBBs)</b>        |              |
| Monobrominated Biphenyls (MonoBB)             | ND           |
| Dibrominated Biphenyls (DiBB)                 | ND           |
| Tribrominated Biphenyls (TriBB)               | ND           |
| Tetrabrominated Biphenyls (TetraBB)           | ND           |
| Pentabrominated Biphenyls (PentaBB)           | ND           |
| Hexabrominated Biphenyls (HexaBB)             | ND           |
| Heptabrominated Biphenyls (HeptaBB)           | ND           |
| Octabrominated Biphenyls (OctaBB)             | ND           |
| Nonabrominated Biphenyls (NonaBB)             | ND           |
| Decabrominated Biphenyl (DecaBB)              | ND           |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |              |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND           |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND           |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND           |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND           |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND           |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND           |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND           |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND           |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND           |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND           |

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287564

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist :Dent Fang / Ken He

(II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ehters (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287564

TESTS CONDUCTED

(III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                  |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm                  |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

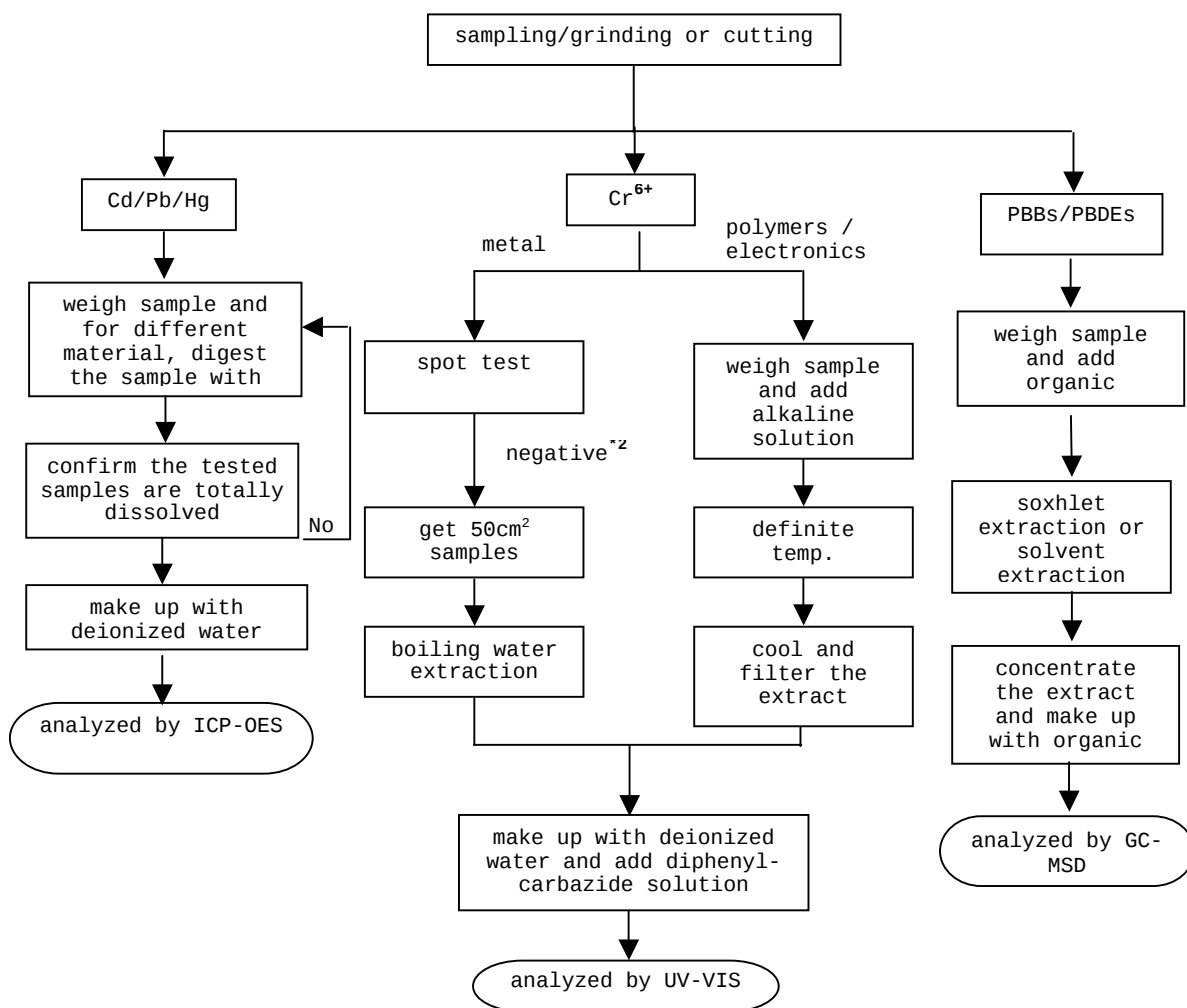
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287564

TESTS CONDUCTED  
 (IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
 Reference Standard: IEC 62321 edition 1.0:2008



\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287564

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287564

TESTS CONDUCTED

4 PHTHALATE CONTENT TEST

WITH REFERENCE TO ASTM D3421, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

|                                    | RESULT (% , w/w) | LIMIT (% , w/w)<br>(MAX. ) |
|------------------------------------|------------------|----------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND               | 0.1                        |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND               | 0.1                        |
| BENZYL BUTYL PHTHALATE (BBP)       | ND               | 0.1                        |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER PRODUCT SAFETY IMPROVEMENT ACT 2008 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01% (w/w)  
ND = NOT DETECTED  
% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE/COMPONENT.

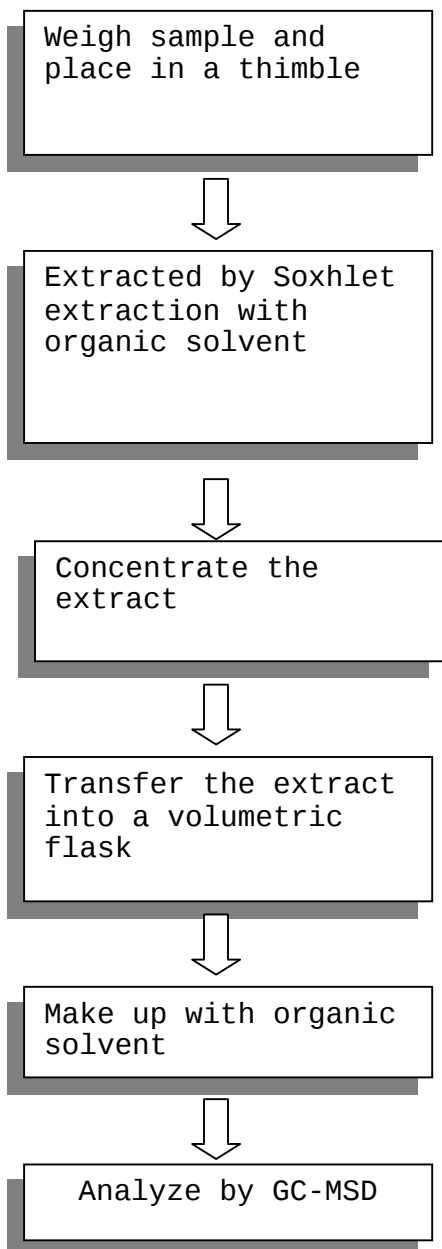
\*\*\*\*\*  
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287564

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



\*\*\*\*\*  
TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287564

TESTS CONDUCTED

5 (A) TEST RESULT SUMMARY:

| <u>TESTING ITEM</u>            | <u>RESULT (ppm)</u> |
|--------------------------------|---------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | ND                  |

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

| <u>TESTING ITEM</u>            | <u>TESTING METHOD</u>                                                        | <u>REPORTING LIMIT</u> |
|--------------------------------|------------------------------------------------------------------------------|------------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS | 10 ppm                 |

DATE SAMPLE RECEIVED : OCT.25, 2011

TESTING PERIOD : OCT.25, 2011 TO OCT.28, 2011

\*\*\*\*\*

TO BE CONTINUED

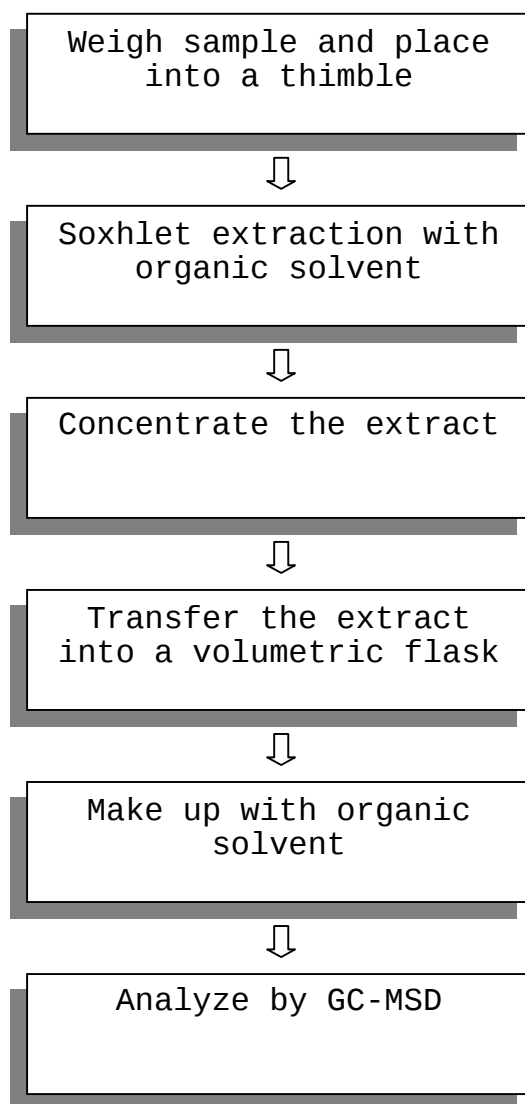
**TEST REPORT**

NUMBER: SHAH00287564

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCDD (Hexabromocyclododecane) CONTENT



\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287564

**TESTS CONDUCTED**



\*\*\*\*\*

END OF REPORT



**TEST REPORT**

NUMBER: SHAH00287549

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: OCT 31, 2011

**SAMPLE DESCRIPTION:**

One (1) submitted sample said to be: **Blue ink.**

Part Description : Ink - blue.

Part Number : 425904.

Date Sample Received : Oct.25, 2011.

Date Test Started : Oct.25, 2011.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

TO BE CONTINUED

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00287549

TESTS CONDUCTED

1 PHthalate Content Test

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

| <u>TESTED COMPOUND</u>             | <u>RESULT (% , W/W)</u> | <u>LIMIT (% , W/W)</u><br><u>(MAX. )</u> |
|------------------------------------|-------------------------|------------------------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND                      | ---                                      |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND                      | ---                                      |
| BENZYL BUTYL PHTHALATE (BBP)       | ND                      | ---                                      |
| SUM OF THREE PHTHALATES            | ND                      | 0.1                                      |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII  
ITEMS 51 & 52 OF THE REACH REGULATION (EC) NO. 1907/2006  
& AMENDMENT NO. 552/2009 (FORMERLY KNOWN AS DIRECTIVE  
2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN  
CARE ARTICLES.

DETECTION LIMIT = 0.01%(W/W)  
ND = NOT DETECTED

\*\*\*\*\*

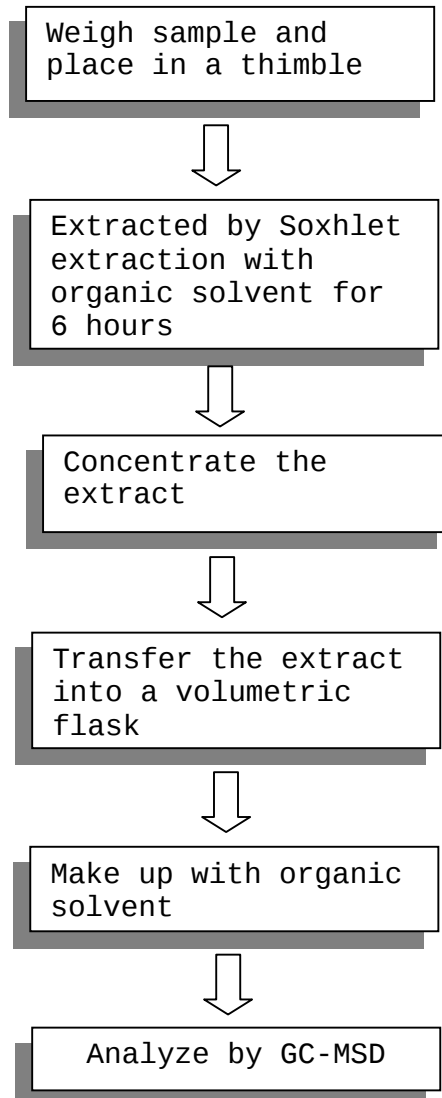
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287549

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES (EN14372) CONTENTS



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TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00287549

### TESTS CONDUCTED

#### 2 (I) Test Result Summary :

| <u>Testing Item</u>    | <u>Result (ppm)</u> |
|------------------------|---------------------|
| <b>Halogen Content</b> |                     |
| Fluorine (F)           | ND                  |
| Chlorine (Cl)          | 500                 |
| Bromine (Br)           | ND                  |
| Iodine (I)             | ND                  |

Remarks: ppm = Parts per million based on weight of tested sample =  
mg/kg

ND = Not detected

Responsibility Of Chemist : Ken He

Date Sample Received : OCT.25, 2011

Testing Period : OCT.28, 2011

#### (II) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

TO BE CONTINUED

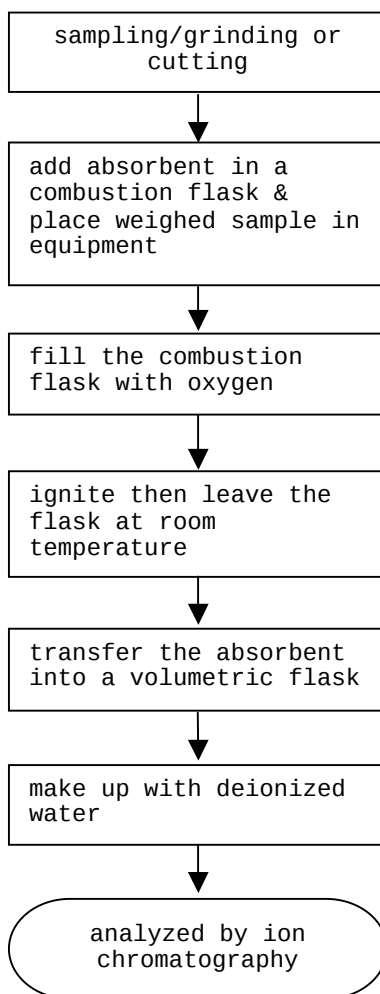
**TEST REPORT**

NUMBER: SHAH00287549

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287549

TESTS CONDUCTED

3 ( I ) Test Result Summary :

| Testing Item                                  | Result (ppm) |
|-----------------------------------------------|--------------|
| <b>Heavy Metal</b>                            |              |
| Cadmium (Cd) content                          | ND           |
| Lead (Pb) content                             | ND           |
| Mercury (Hg) content                          | ND           |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND           |
| <b>Polybrominated Biphenyls (PBBs)</b>        |              |
| Monobrominated Biphenyls (MonoBB)             | ND           |
| Dibrominated Biphenyls (DiBB)                 | ND           |
| Tribrominated Biphenyls (TriBB)               | ND           |
| Tetrabrominated Biphenyls (TetraBB)           | ND           |
| Pentabrominated Biphenyls (PentaBB)           | ND           |
| Hexabrominated Biphenyls (HexaBB)             | ND           |
| Heptabrominated Biphenyls (HeptaBB)           | ND           |
| Octabrominated Biphenyls (OctaBB)             | ND           |
| Nonabrominated Biphenyls (NonaBB)             | ND           |
| Decabrominated Biphenyl (DecaBB)              | ND           |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |              |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND           |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND           |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND           |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND           |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND           |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND           |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND           |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND           |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND           |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND           |

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287549

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist : Dent Fang / Ken He

Date Sample Received : OCT.28, 2011  
Testing Period : OCT.28, 2011

( II ) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ehters (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287549

TESTS CONDUCTED

(III) Test Method:

| Testing Item                            | Testing Method                                                                                                                                                  | Reporting Limit |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm           |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm           |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm           |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm           |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm           |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm           |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

TO BE CONTINUED

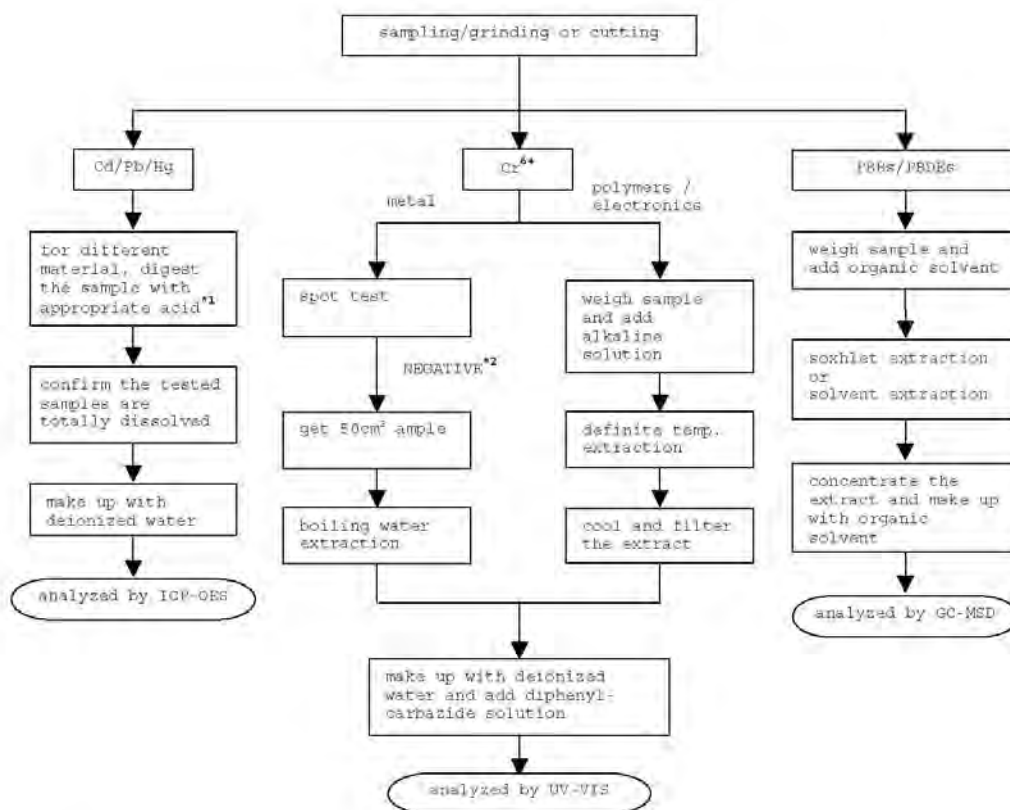
## TEST REPORT

NUMBER: SHAH00287549

### TESTS CONDUCTED

#### (IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
Reference Standard: IEC 62321 edition 1.0:2008



Remarks:

\*1: List Of Appropriate Acid:

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

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287549

TESTS CONDUCTED

4 PHthalate Content Test

WITH REFERENCE TO ASTM D3421, BY GAS CHROMATOGRAPHY-MASS  
SPECTROMETRY (GC-MS) ANALYSIS.

|                                    | <u>RESULT (% w/w)</u> | <u>LIMIT (% w/w)</u><br><u>(MAX.)</u> |
|------------------------------------|-----------------------|---------------------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND                    | 0.1                                   |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND                    | 0.1                                   |
| BENZYL BUTYL PHTHALATE (BBP)       | ND                    | 0.1                                   |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER  
PRODUCT SAFETY IMPROVEMENT ACT 2008 FOR PROHIBITION ON  
SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01% (w/w)

ND = NOT DETECTED

\*\*\*\*\*

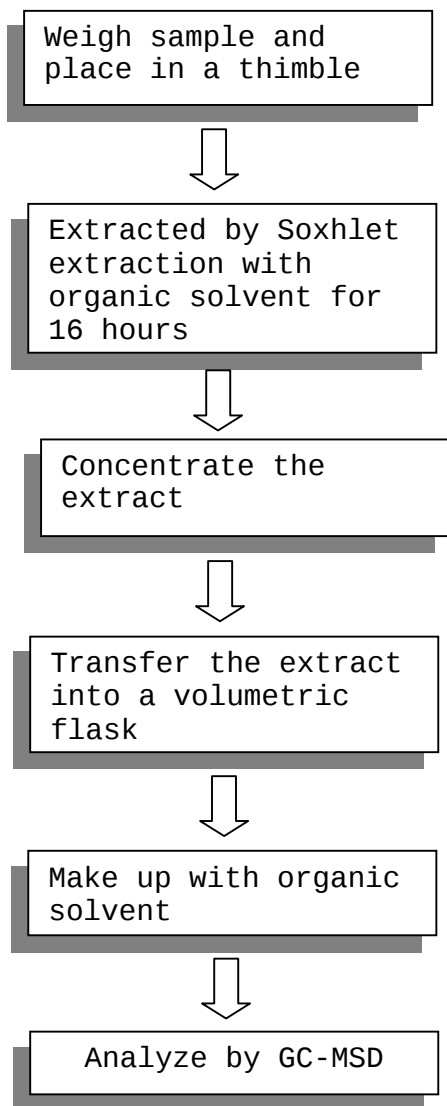
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287549

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES (ASTM D3421) CONTENTS



\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287549

TESTS CONDUCTED

5 (A) TEST RESULT SUMMARY:

| <u>TESTING ITEM</u>            | <u>RESULT (ppm)</u> |
|--------------------------------|---------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | ND                  |

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

| <u>TESTING ITEM</u>            | <u>TESTING METHOD</u>                                                                 | <u>REPORTING<br/>LIMIT</u> |
|--------------------------------|---------------------------------------------------------------------------------------|----------------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | WITH REFERENCE TO USEPA<br>3540C, BY SOLVENT<br>EXTRACTION AND DETERMINED<br>BY GC/MS | 10 ppm                     |

DATE SAMPLE RECEIVED : OCT.25, 2011

TESTING PERIOD : OCT.25, 2011 TO OCT.28, 2011

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TO BE CONTINUED

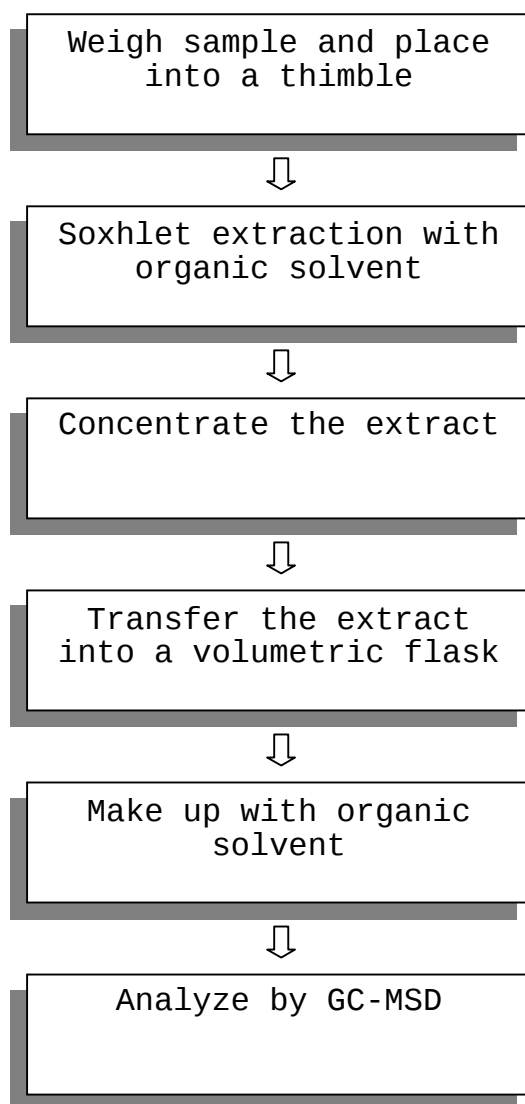
**TEST REPORT**

NUMBER: SHAH00287549

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCDD (Hexabromocyclododecane) CONTENT



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287549

**TESTS CONDUCTED**

**SHAH00226931**



\*\*\*\*\*

END OF REPORT



**TEST REPORT**

NUMBER: SHAH00287516

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: OCT 31, 2011

**SAMPLE DESCRIPTION:**

One (1) submitted sample said to be **Brown ink.**

Part Description : Ink - brown.

Part Number : 425906.

Date Sample Received : Oct.25, 2011.

Date Test Started : Oct.25, 2011.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

TO BE CONTINUED

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00287516

TESTS CONDUCTED

1 PHthalate Content Test

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS  
 SPECTROMETRY (GC-MS) ANALYSIS.

| <u>TESTED COMPOUND</u>             | <u>RESULT (% , W/W)</u> | <u>LIMIT (% , W/W)</u><br><u>(MAX. )</u> |
|------------------------------------|-------------------------|------------------------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND                      | ---                                      |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND                      | ---                                      |
| BENZYL BUTYL PHTHALATE (BBP)       | ND                      | ---                                      |
| SUM OF THREE PHTHALATES            | ND                      | 0.1                                      |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII  
 ITEMS 51 & 52 OF THE REACH REGULATION (EC) NO. 1907/2006  
 & AMENDMENT NO.552/2009 (FORMERLY KNOWN AS DIRECTIVE  
 2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN  
 CARE ARTICLES.

DETECTION LIMIT = 0.01%(W/W)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE/COMPONENT

\*\*\*\*\*

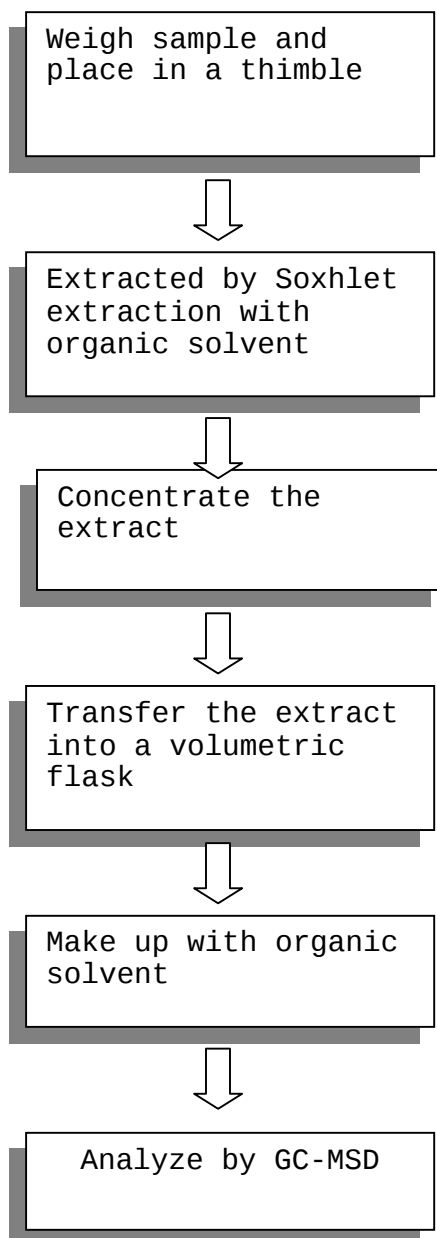
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287516

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287516

TESTS CONDUCTED

2 (I) Test Result Summary :

| <u>Testing Item</u>    | <u>Result (ppm)</u> |
|------------------------|---------------------|
| <b>Halogen Content</b> |                     |
| Fluorine (F)           | ND                  |
| Chlorine (Cl)          | 6850                |
| Bromine (Br)           | ND                  |
| Iodine (I)             | ND                  |

Remarks: ppm = Parts per million based on weight of tested sample =  
 mg/kg  
 ND = Not detected

Responsibility Of Chemist : Ken He

(II) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*  
 TO BE CONTINUED

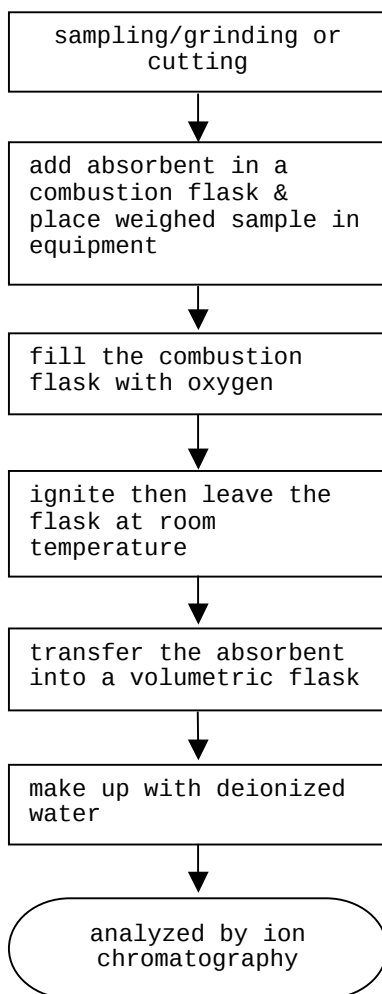
**TEST REPORT**

NUMBER: SHAH00287516

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



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TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00287516

### TESTS CONDUCTED

#### 3 (I) Test Result Summary :

| Testing Item                                  | Result (ppm) |
|-----------------------------------------------|--------------|
| <b>Heavy Metal</b>                            |              |
| Cadmium (Cd) content                          | ND           |
| Lead (Pb) content                             | ND           |
| Mercury (Hg) content                          | ND           |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND           |
| <b>Polybrominated Biphenyls (PBBs)</b>        |              |
| Monobrominated Biphenyls (MonoBB)             | ND           |
| Dibrominated Biphenyls (DiBB)                 | ND           |
| Tribrominated Biphenyls (TriBB)               | ND           |
| Tetrabrominated Biphenyls (TetraBB)           | ND           |
| Pentabrominated Biphenyls (PentaBB)           | ND           |
| Hexabrominated Biphenyls (HexaBB)             | ND           |
| Heptabrominated Biphenyls (HeptaBB)           | ND           |
| Octabrominated Biphenyls (OctaBB)             | ND           |
| Nonabrominated Biphenyls (NonaBB)             | ND           |
| Decabrominated Biphenyl (DecaBB)              | ND           |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |              |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND           |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND           |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND           |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND           |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND           |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND           |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND           |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND           |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND           |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND           |

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287516

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist : Dent Fang / Ken He

(II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287516

TESTS CONDUCTED

(III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                  |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm                  |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

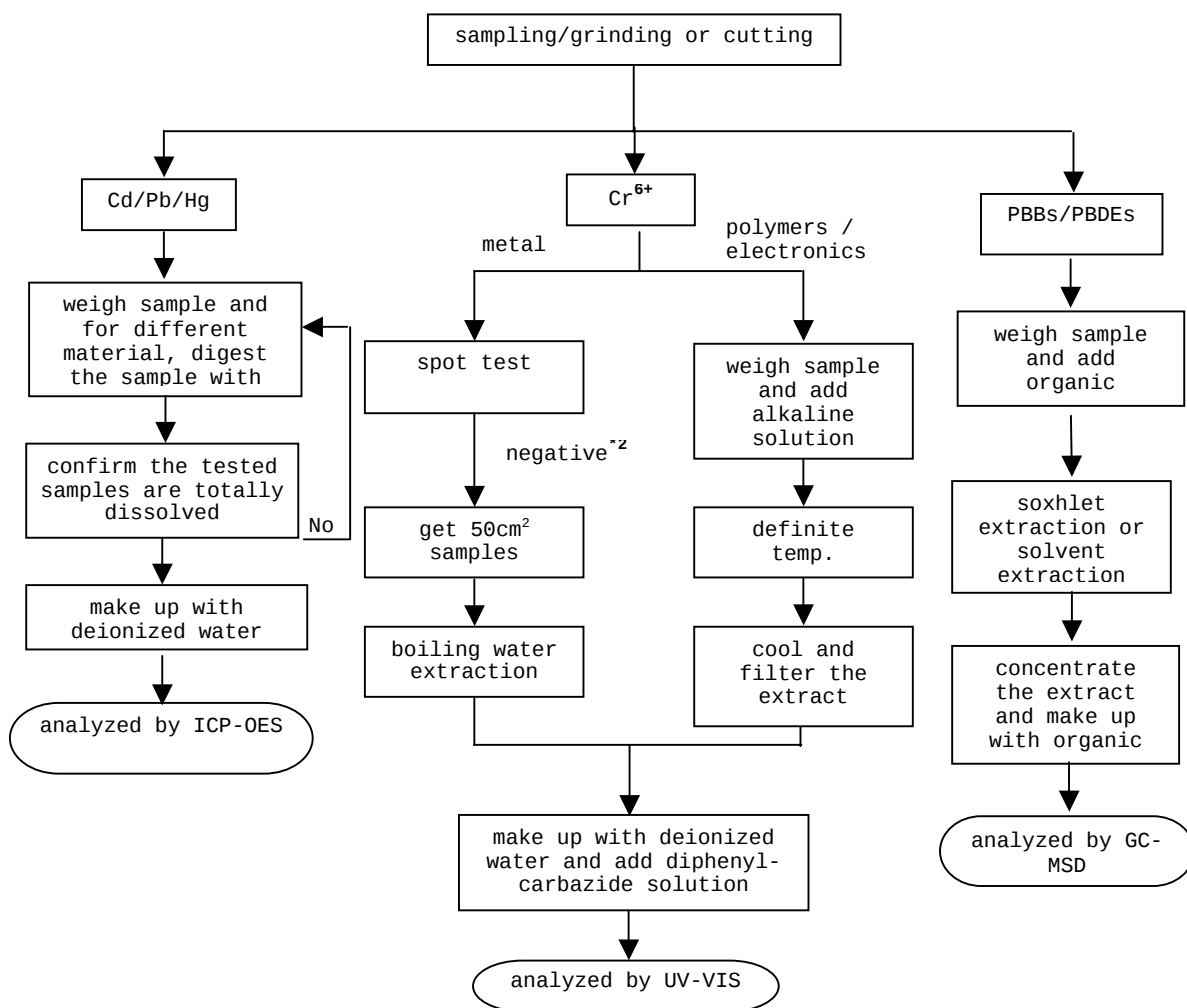
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287516

TESTS CONDUCTED  
 (IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
 Reference Standard: IEC 62321 edition 1.0:2008



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TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287516

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287516

TESTS CONDUCTED

4 PHthalate Content Test

WITH REFERENCE TO ASTM D3421, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

|                                    | RESULT (% , w/w) | LIMIT (% , w/w)<br>(MAX. ) |
|------------------------------------|------------------|----------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND               | 0.1                        |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND               | 0.1                        |
| BENZYL BUTYL PHTHALATE (BBP)       | ND               | 0.1                        |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER PRODUCT SAFETY IMPROVEMENT ACT 2008 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01% (w/w)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE/COMPONENT.

\*\*\*\*\*

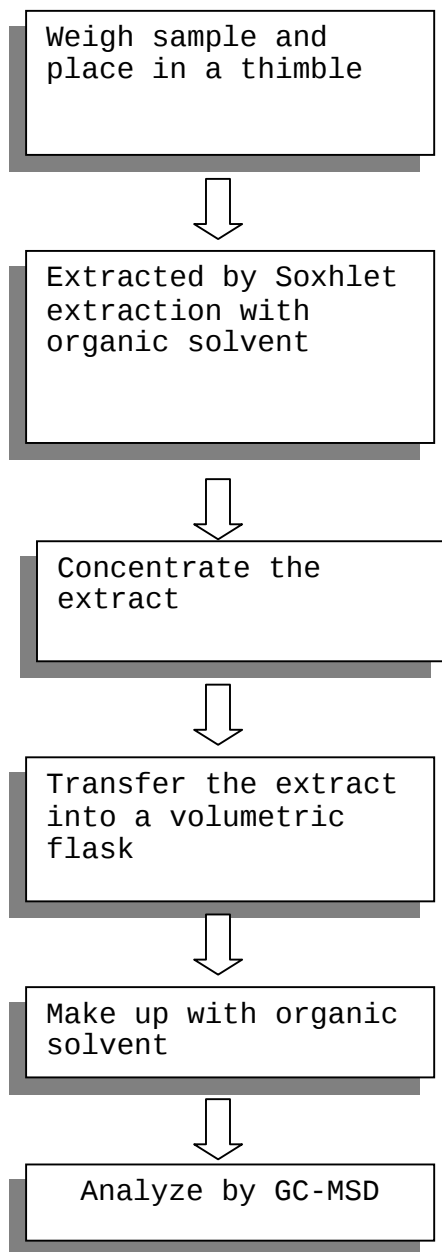
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287516

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



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TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287516

TESTS CONDUCTED

5 (A) TEST RESULT SUMMARY:

| <u>TESTING ITEM</u>            | <u>RESULT (ppm)</u> |
|--------------------------------|---------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | ND                  |

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

| <u>TESTING ITEM</u>            | <u>TESTING METHOD</u>                                                                 | <u>REPORTING<br/>LIMIT</u> |
|--------------------------------|---------------------------------------------------------------------------------------|----------------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | WITH REFERENCE TO USEPA<br>3540C, BY SOLVENT<br>EXTRACTION AND DETERMINED<br>BY GC/MS | 10 ppm                     |

DATE SAMPLE RECEIVED : OCT.25, 2011

TESTING PERIOD : OCT.25, 2011 TO OCT.28, 2011

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TO BE CONTINUED

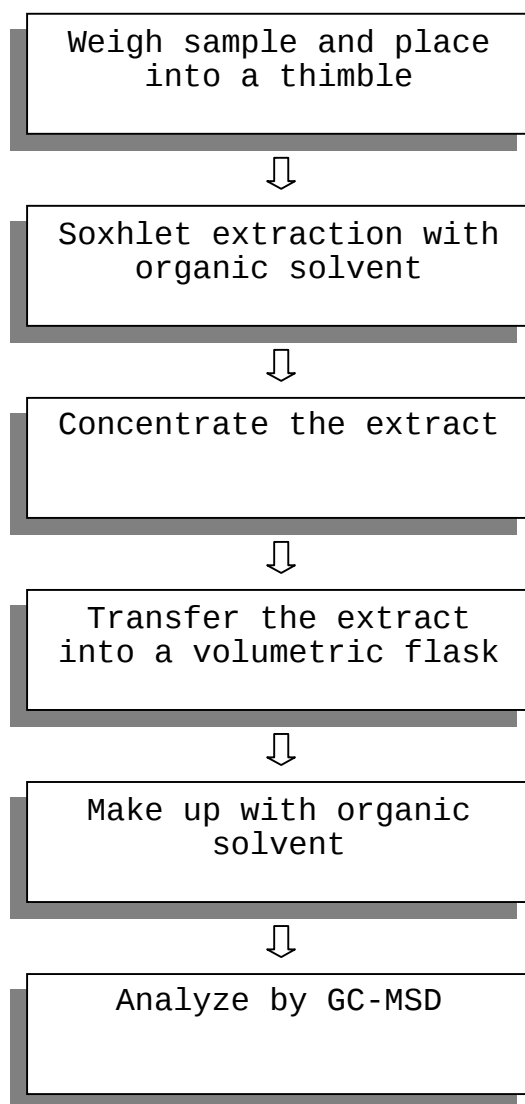
**TEST REPORT**

NUMBER: SHAH00287516

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCDD (Hexabromocyclododecane) CONTENT



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287516

**TESTS CONDUCTED**



\*\*\*\*\*

END OF REPORT



**TEST REPORT**

NUMBER: SHAH00287571

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: NOV 01, 2011

**SAMPLE DESCRIPTION:**

One (1) submitted sample said to be **Green ink.**

Part Description : Ink - green.

Part Number : 425907.

Date Sample Received : Oct.25, 2011.

Date Test Started : Oct.25, 2011.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

TO BE CONTINUED

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED

1 PHthalate Content Test

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

| <u>TESTED COMPOUND</u>             | <u>RESULT (% W/W)</u> | <u>LIMIT (% W/W)</u><br><u>(MAX.)</u> |
|------------------------------------|-----------------------|---------------------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND                    | ---                                   |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND                    | ---                                   |
| BENZYL BUTYL PHTHALATE (BBP)       | ND                    | ---                                   |
| SUM OF THREE PHTHALATES            | ND                    | 0.1                                   |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII  
ITEMS 51 & 52 OF THE REACH REGULATION (EC) NO. 1907/2006  
& AMENDMENT NO. 552/2009 (FORMERLY KNOWN AS DIRECTIVE  
2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN  
CARE ARTICLES.

DETECTION LIMIT = 0.01% (W/W)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE/COMPONENT

\*\*\*\*\*

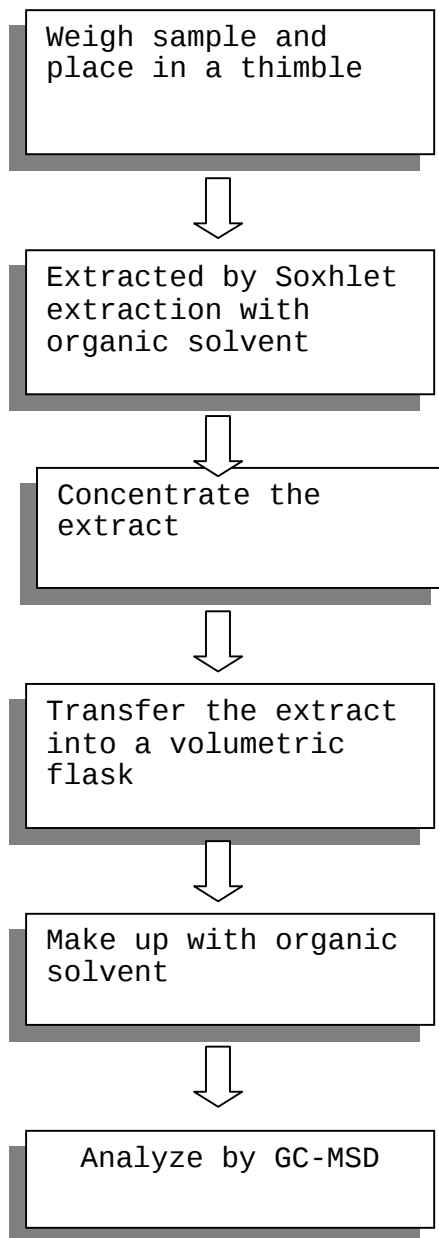
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED

2 (I) Test Result Summary :

| <u>Testing Item</u>    | <u>Result (ppm)</u> |
|------------------------|---------------------|
| <b>Halogen Content</b> |                     |
| Fluorine (F)           | ND                  |
| Chlorine (Cl)          | 400                 |
| Bromine (Br)           | ND                  |
| Iodine (I)             | ND                  |

Remarks: ppm = Parts per million based on weight of tested sample =  
 mg/kg  
 ND = Not detected

Responsibility Of Chemist : Ken He

(II) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*  
 TO BE CONTINUED

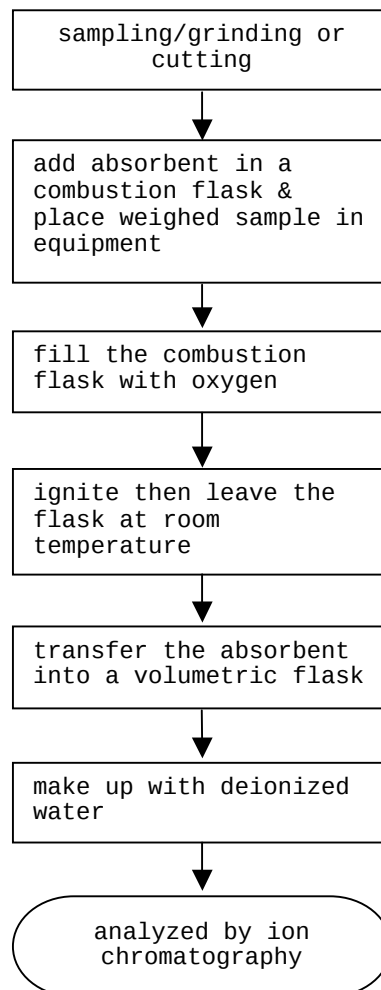
**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



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TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00287571

### TESTS CONDUCTED

#### 3 (I) Test Result Summary :

| Testing Item                                  | Result (ppm) |
|-----------------------------------------------|--------------|
| <b>Heavy Metal</b>                            |              |
| Cadmium (Cd) content                          | ND           |
| Lead (Pb) content                             | ND           |
| Mercury (Hg) content                          | ND           |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND           |
| <b>Polybrominated Biphenyls (PBBs)</b>        |              |
| Monobrominated Biphenyls (MonoBB)             | ND           |
| Dibrominated Biphenyls (DiBB)                 | ND           |
| Tribrominated Biphenyls (TriBB)               | ND           |
| Tetrabrominated Biphenyls (TetraBB)           | ND           |
| Pentabrominated Biphenyls (PentaBB)           | ND           |
| Hexabrominated Biphenyls (HexaBB)             | ND           |
| Heptabrominated Biphenyls (HeptaBB)           | ND           |
| Octabrominated Biphenyls (OctaBB)             | ND           |
| Nonabrominated Biphenyls (NonaBB)             | ND           |
| Decabrominated Biphenyl (DecaBB)              | ND           |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |              |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND           |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND           |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND           |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND           |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND           |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND           |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND           |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND           |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND           |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND           |

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist : Dent Fang / Ken He

(II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED

(III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                  |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm                  |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

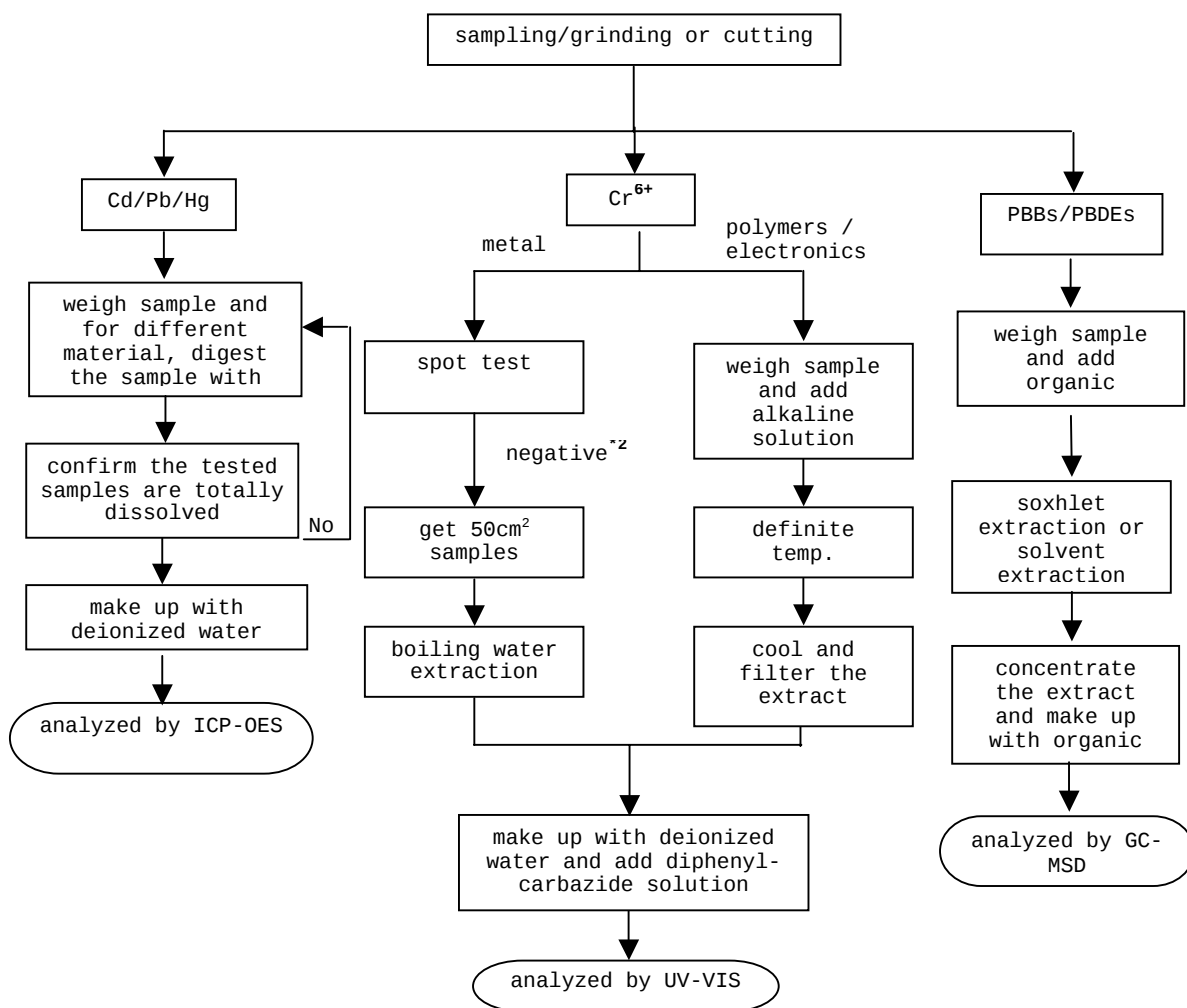
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED  
 (IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
 Reference Standard: IEC 62321 edition 1.0:2008



\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED

4 PHthalate Content Test

WITH REFERENCE TO ASTM D3421, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

|                                    | RESULT (% , w/w) | LIMIT (% , w/w)<br>(MAX.) |
|------------------------------------|------------------|---------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND               | 0.1                       |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND               | 0.1                       |
| BENZYL BUTYL PHTHALATE (BBP)       | ND               | 0.1                       |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER PRODUCT SAFETY IMPROVEMENT ACT 2008 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01% (w/w)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE/COMPONENT.

\*\*\*\*\*

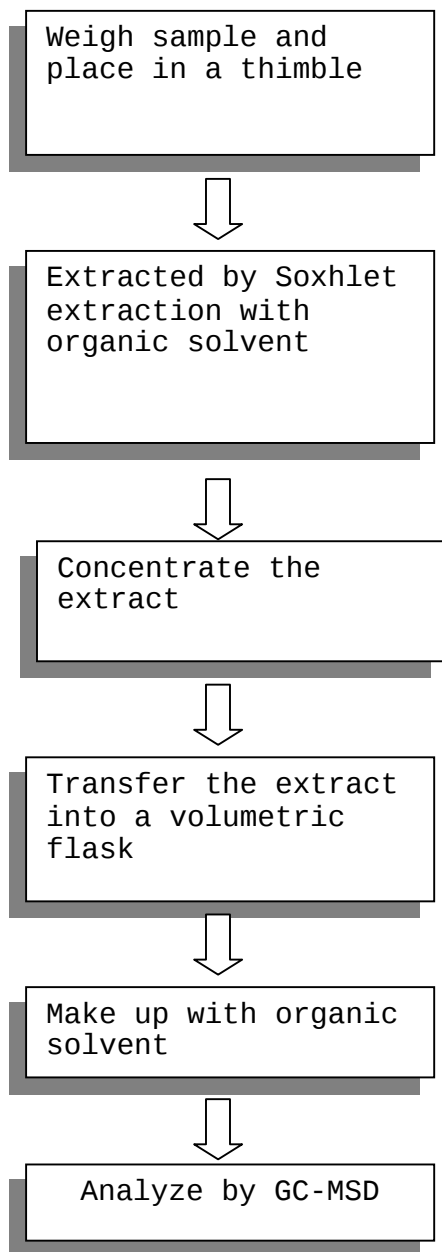
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED

5 (A) TEST RESULT SUMMARY:

| <u>TESTING ITEM</u>            | <u>RESULT (ppm)</u> |
|--------------------------------|---------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | ND                  |

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

| <u>TESTING ITEM</u>            | <u>TESTING METHOD</u>                                                                 | <u>REPORTING<br/>LIMIT</u> |
|--------------------------------|---------------------------------------------------------------------------------------|----------------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | WITH REFERENCE TO USEPA<br>3540C, BY SOLVENT<br>EXTRACTION AND DETERMINED<br>BY GC/MS | 10 ppm                     |

DATE SAMPLE RECEIVED : OCT.25, 2011

TESTING PERIOD : OCT.25, 2011 TO OCT.28, 2011

\*\*\*\*\*

TO BE CONTINUED

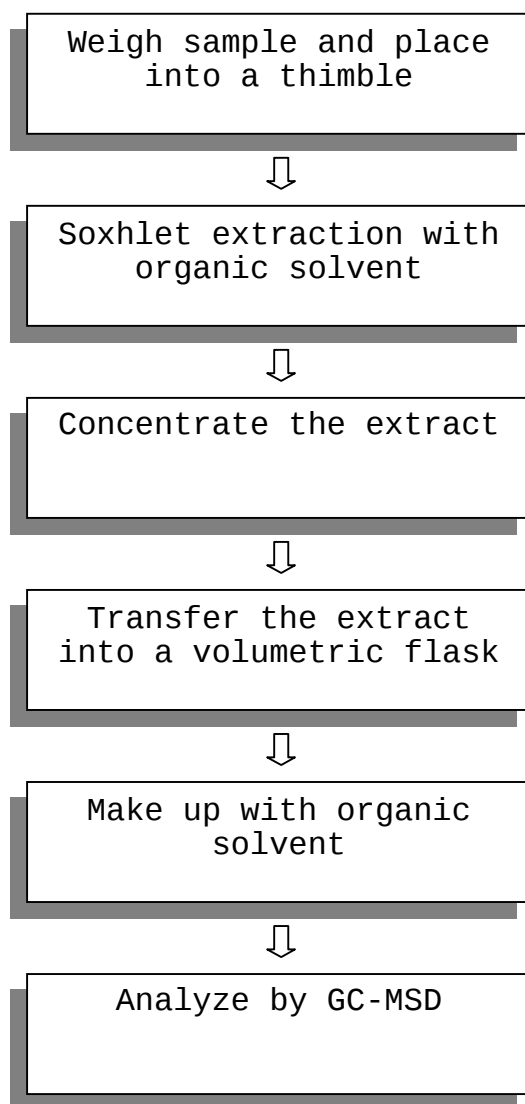
**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCDD (Hexabromocyclododecane) CONTENT



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287571

TESTS CONDUCTED



\*\*\*\*\*

END OF REPORT



**TEST REPORT**

NUMBER: SHAH00287556

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: OCT 31, 2011

**SAMPLE DESCRIPTION:**

One (1) submitted sample said to be **Grey ink.**

Part Description : Ink - grey.

Part Number : 425909.

Date Sample Received : Oct.25, 2011.

Date Test Started : Oct.25, 2011.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

TO BE CONTINUED

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED

1 PHthalate Content Test

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

| <u>TESTED COMPOUND</u>             | <u>RESULT (% W/W)</u> | <u>LIMIT (% W/W)</u><br><u>(MAX.)</u> |
|------------------------------------|-----------------------|---------------------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND                    | ---                                   |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND                    | ---                                   |
| BENZYL BUTYL PHTHALATE (BBP)       | ND                    | ---                                   |
| SUM OF THREE PHTHALATES            | ND                    | 0.1                                   |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII  
 ITEMS 51 & 52 OF THE REACH REGULATION (EC) NO. 1907/2006  
 & AMENDMENT NO. 552/2009 (FORMERLY KNOWN AS DIRECTIVE  
 2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN  
 CARE ARTICLES.

DETECTION LIMIT = 0.01%(W/W)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE/COMPONENT

\*\*\*\*\*

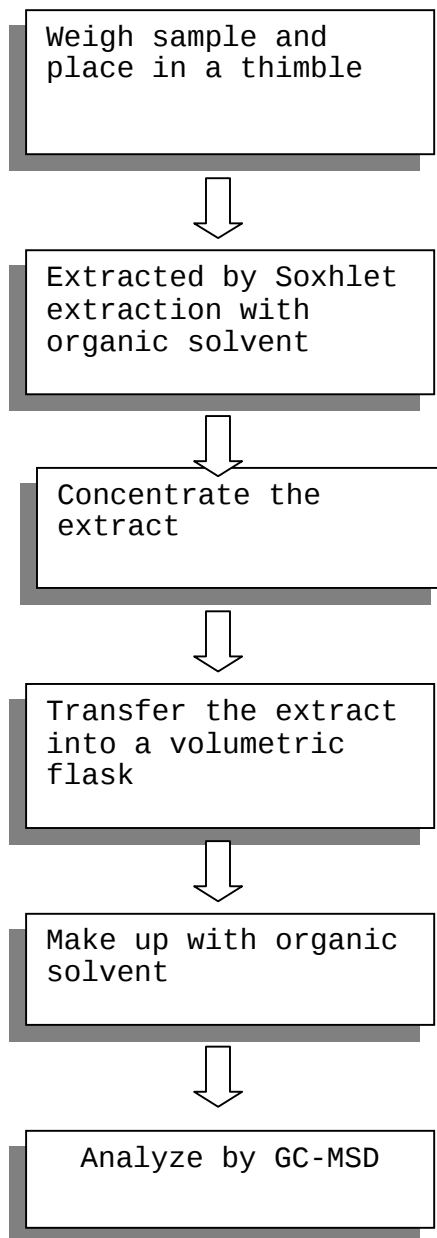
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED

2 (I) Test Result Summary :

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

Remarks: ppm = Parts per million based on weight of tested sample =  
mg/kg  
ND = Not detected

Responsibility Of Chemist : Ken He

(II) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

TO BE CONTINUED

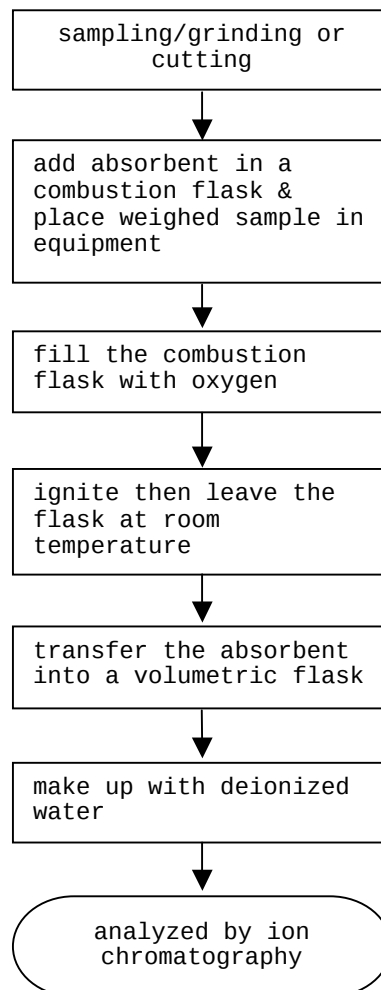
**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



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TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00287556

### TESTS CONDUCTED

#### 3 (I) Test Result Summary :

| <u>Testing Item</u>                           | <u>Result (ppm)</u> |
|-----------------------------------------------|---------------------|
| <b>Heavy Metal</b>                            |                     |
| Cadmium (Cd) content                          | ND                  |
| Lead (Pb) content                             | ND                  |
| Mercury (Hg) content                          | ND                  |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND                  |
| <b>Polybrominated Biphenyls (PBBs)</b>        |                     |
| Monobrominated Biphenyls (MonoBB)             | ND                  |
| Dibrominated Biphenyls (DiBB)                 | ND                  |
| Tribrominated Biphenyls (TriBB)               | ND                  |
| Tetrabrominated Biphenyls (TetraBB)           | ND                  |
| Pentabrominated Biphenyls (PentaBB)           | ND                  |
| Hexabrominated Biphenyls (HexaBB)             | ND                  |
| Heptabrominated Biphenyls (HeptaBB)           | ND                  |
| Octabrominated Biphenyls (OctaBB)             | ND                  |
| Nonabrominated Biphenyls (NonaBB)             | ND                  |
| Decabrominated Biphenyl (DecaBB)              | ND                  |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |                     |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND                  |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND                  |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND                  |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND                  |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND                  |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND                  |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND                  |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND                  |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND                  |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND                  |

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist : Dent Fang / Ken He

(II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED

(III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                  |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm                  |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

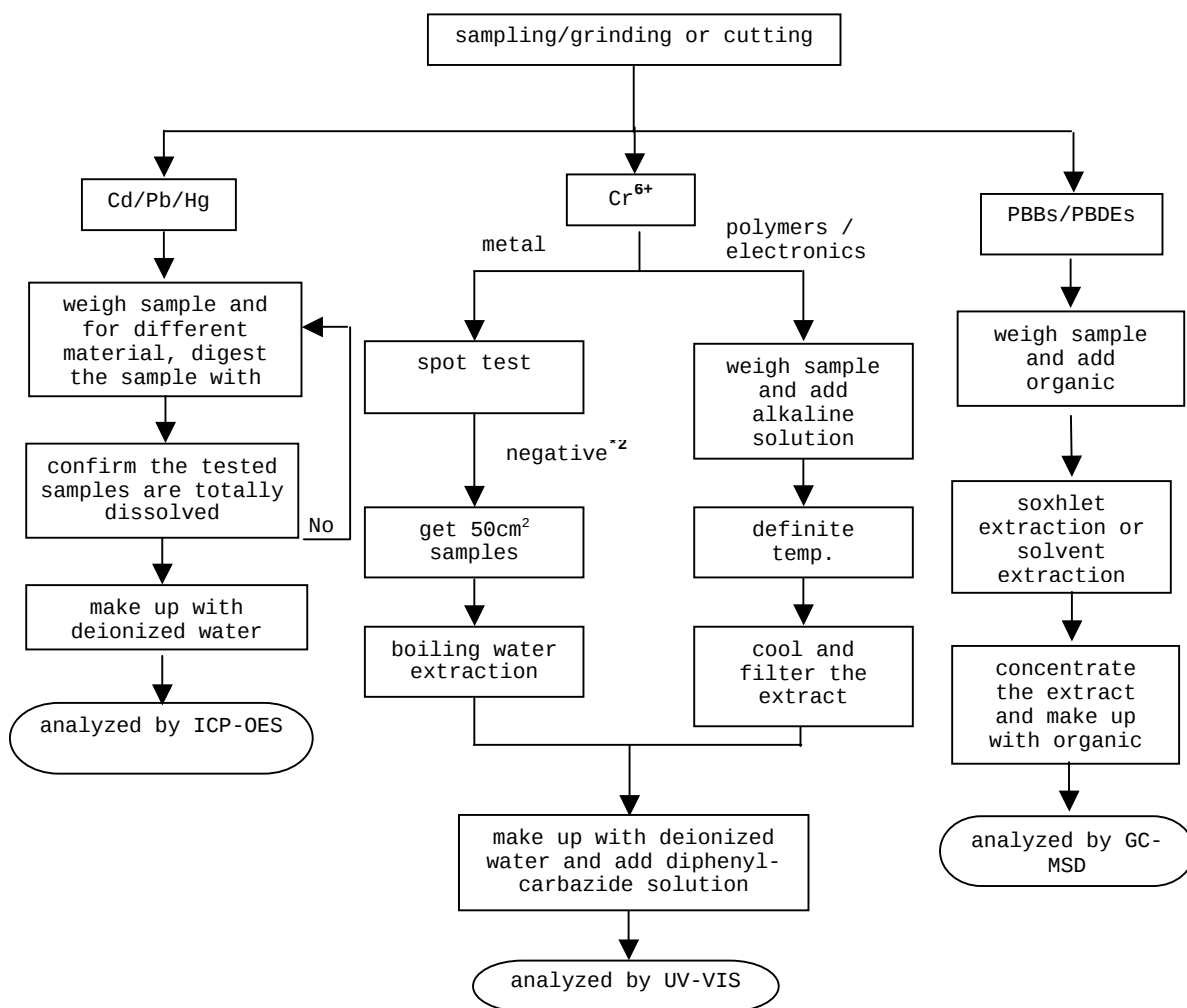
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED  
 (IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
 Reference Standard: IEC 62321 edition 1.0:2008



\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED

4 PHthalate Content Test

WITH REFERENCE TO ASTM D3421, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

|                                    | RESULT (% , w/w) | LIMIT (% , w/w)<br>(MAX.) |
|------------------------------------|------------------|---------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND               | 0.1                       |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND               | 0.1                       |
| BENZYL BUTYL PHTHALATE (BBP)       | ND               | 0.1                       |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER PRODUCT SAFETY IMPROVEMENT ACT 2008 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01% (w/w)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE/COMPONENT.

\*\*\*\*\*

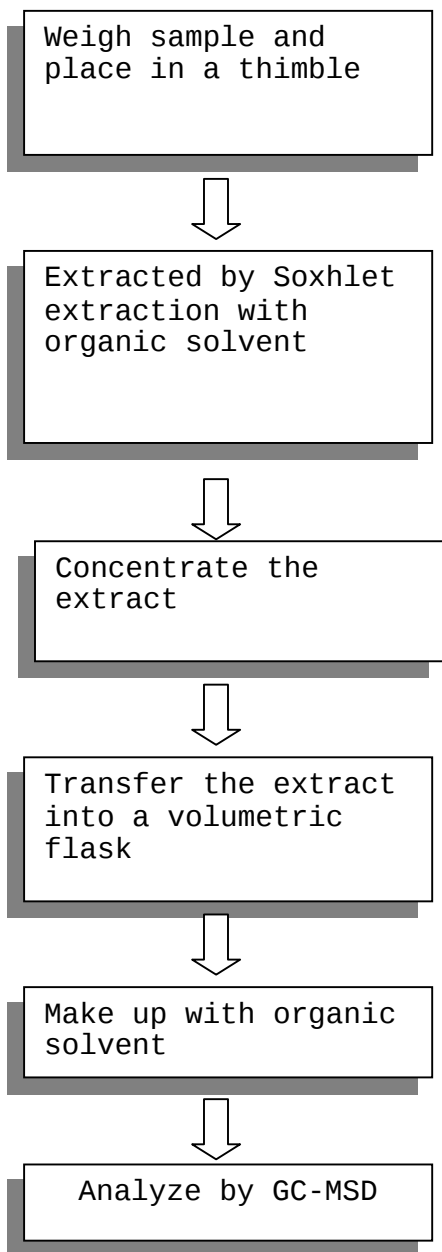
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED  
 5 (A) TEST RESULT SUMMARY:

| <u>TESTING ITEM</u>            | <u>RESULT (ppm)</u> |
|--------------------------------|---------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | ND                  |

REMARKS:

ppm = PARTS PER MILLION = mg/kg  
 ND = NOT DETECTED

(B) TEST METHOD :

| <u>TESTING ITEM</u>            | <u>TESTING METHOD</u>                                                        | <u>REPORTING LIMIT</u> |
|--------------------------------|------------------------------------------------------------------------------|------------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS | 10 ppm                 |

DATE SAMPLE RECEIVED : OCT.25, 2011

TESTING PERIOD : OCT.25, 2011 TO OCT.28, 2011

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TO BE CONTINUED

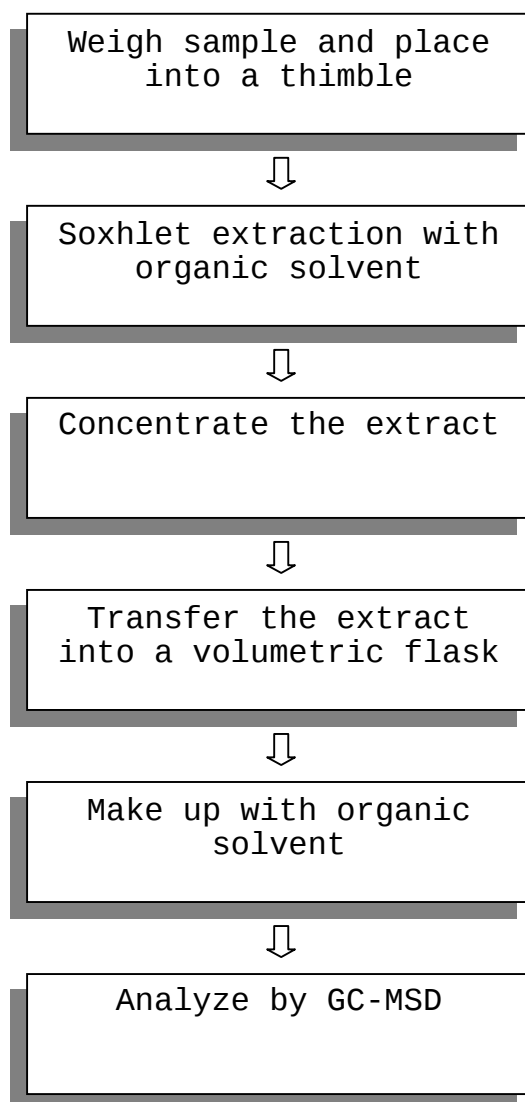
**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCDD (Hexabromocyclododecane) CONTENT



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287556

TESTS CONDUCTED



\*\*\*\*\*

END OF REPORT



**TEST REPORT**

NUMBER: SHAH00287551

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: OCT 31, 2011

**SAMPLE DESCRIPTION:**

One (1) submitted sample said to be: **Violet ink.**

Part Description : Ink - violet.

Part Number : 425911.

Date Sample Received : Oct.25, 2011.

Date Test Started : Oct.25, 2011.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00287551

TESTS CONDUCTED

1 PHthalate Content Test

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

| <u>TESTED COMPOUND</u>             | <u>RESULT (% ,W/W)</u> | <u>LIMIT (% ,W/W)</u><br><u>(MAX. )</u> |
|------------------------------------|------------------------|-----------------------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND                     | ---                                     |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND                     | ---                                     |
| BENZYL BUTYL PHTHALATE (BBP)       | ND                     | ---                                     |
| SUM OF THREE PHTHALATES            | ND                     | 0.1                                     |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII  
ITEMS 51 & 52 OF THE REACH REGULATION (EC) NO. 1907/2006  
& AMENDMENT NO. 552/2009 (FORMERLY KNOWN AS DIRECTIVE  
2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN  
CARE ARTICLES.

DETECTION LIMIT = 0.01%(W/W)  
ND = NOT DETECTED

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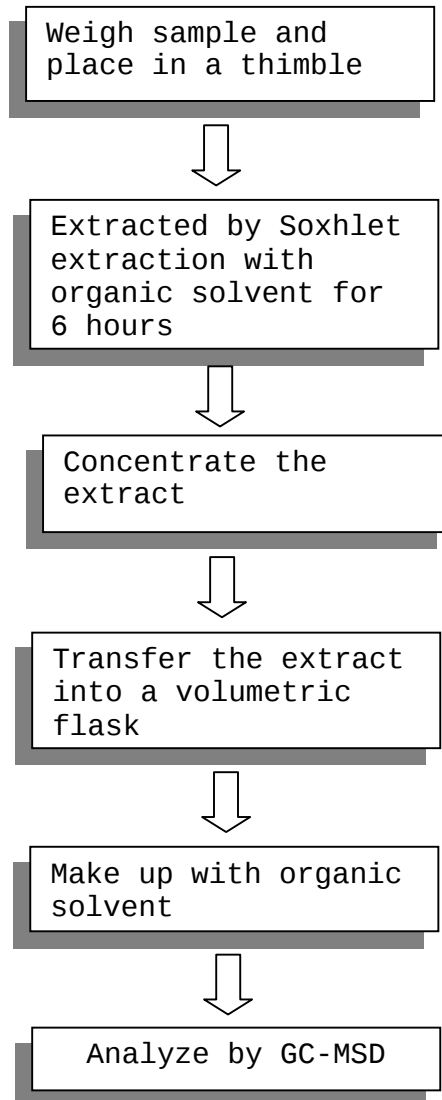
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287551

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES (EN14372) CONTENTS



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287551

TESTS CONDUCTED

2 ( I ) Test Result Summary :

| <u>Testing Item</u>    | <u>Result (ppm)</u> |
|------------------------|---------------------|
| <b>Halogen Content</b> |                     |
| Fluorine (F)           | ND                  |
| Chlorine (Cl)          | 11250               |
| Bromine (Br)           | ND                  |
| Iodine (I)             | ND                  |

Remarks: ppm = Parts per million based on weight of tested sample =  
mg/kg

ND = Not detected

Responsibility Of Chemist : Ken He

Date Sample Received : OCT.28, 2011

Testing Period : OCT.28, 2011

( II ) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

TO BE CONTINUED

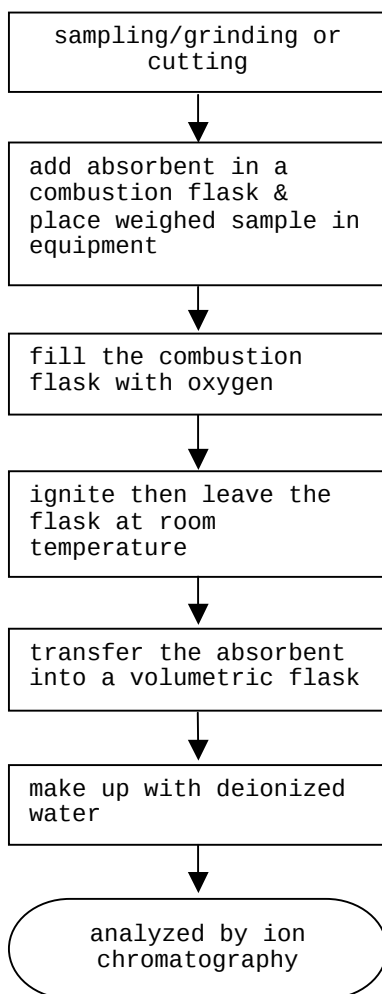
**TEST REPORT**

NUMBER: SHAH00287551

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



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TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00287551

### TESTS CONDUCTED

3 ( I ) Test Result Summary :

| Testing Item                                  | Result (ppm) |
|-----------------------------------------------|--------------|
| <b>Heavy Metal</b>                            |              |
| Cadmium (Cd) content                          | ND           |
| Lead (Pb) content                             | ND           |
| Mercury (Hg) content                          | ND           |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND           |
| <b>Polybrominated Biphenyls (PBBs)</b>        |              |
| Monobrominated Biphenyls (MonoBB)             | ND           |
| Dibrominated Biphenyls (DiBB)                 | ND           |
| Tribrominated Biphenyls (TriBB)               | ND           |
| Tetrabrominated Biphenyls (TetraBB)           | ND           |
| Pentabrominated Biphenyls (PentaBB)           | ND           |
| Hexabrominated Biphenyls (HexaBB)             | ND           |
| Heptabrominated Biphenyls (HeptaBB)           | ND           |
| Octabrominated Biphenyls (OctaBB)             | ND           |
| Nonabrominated Biphenyls (NonaBB)             | ND           |
| Decabrominated Biphenyl (DecaBB)              | ND           |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |              |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND           |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND           |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND           |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND           |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND           |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND           |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND           |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND           |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND           |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND           |

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287551

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist : Dent Fang / Ken He

Date Sample Received : OCT.25, 2011  
Testing Period : OCT.28, 2011

( II ) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ehters (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287551

TESTS CONDUCTED

(III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                  |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm                  |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

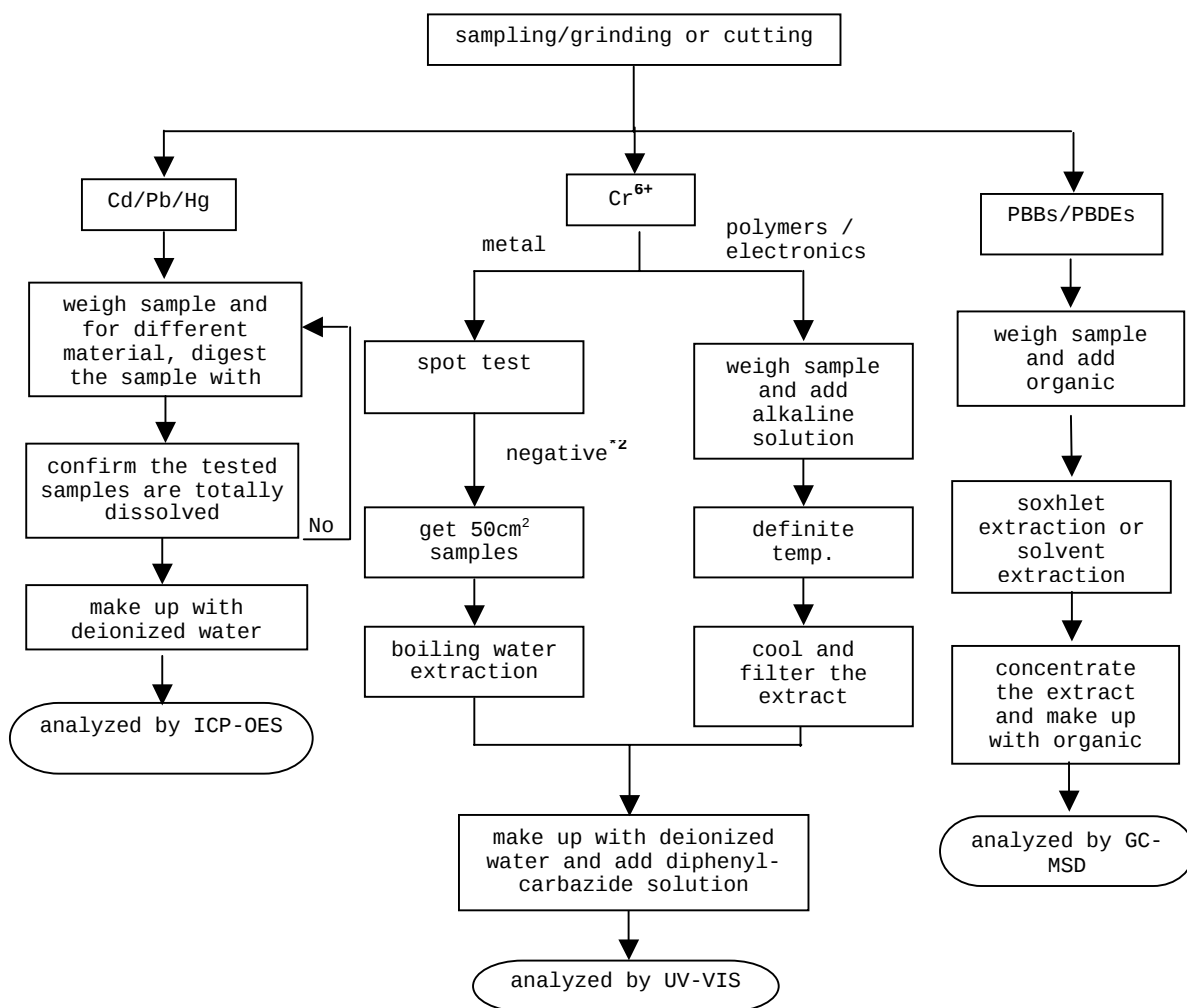
TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00287551

### TESTS CONDUCTED (IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
Reference Standard: IEC 62321 edition 1.0:2008



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TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287551

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287551

TESTS CONDUCTED

4 PHthalate Content Test

WITH REFERENCE TO ASTM D3421, BY GAS CHROMATOGRAPHY-MASS  
SPECTROMETRY (GC-MS) ANALYSIS.

|                                    | <u>RESULT (% , w/w)</u> | <u>LIMIT (% , w/w)</u><br><u>(MAX.)</u> |
|------------------------------------|-------------------------|-----------------------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND                      | 0.1                                     |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND                      | 0.1                                     |
| BENZYL BUTYL PHTHALATE (BBP)       | ND                      | 0.1                                     |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER  
PRODUCT SAFETY IMPROVEMENT ACT 2008 FOR PROHIBITION ON  
SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01% (w/w)  
ND = NOT DETECTED

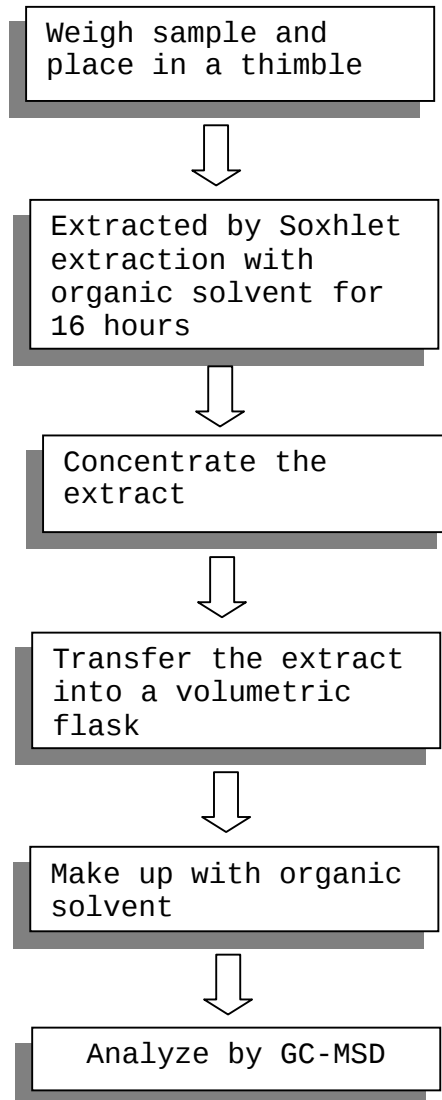
\*\*\*\*\*  
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287551

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES (ASTM D3421) CONTENTS



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TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287551

TESTS CONDUCTED

5 (A) TEST RESULT SUMMARY:

| <u>TESTING ITEM</u>            | <u>RESULT (ppm)</u> |
|--------------------------------|---------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | ND                  |

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

| <u>TESTING ITEM</u>            | <u>TESTING METHOD</u>                                                                 | <u>REPORTING<br/>LIMIT</u> |
|--------------------------------|---------------------------------------------------------------------------------------|----------------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | WITH REFERENCE TO USEPA<br>3540C, BY SOLVENT<br>EXTRACTION AND DETERMINED<br>BY GC/MS | 10 ppm                     |

DATE SAMPLE RECEIVED : OCT.25, 2011

TESTING PERIOD : OCT.25, 2011 TO OCT.28, 2011

\*\*\*\*\*

TO BE CONTINUED

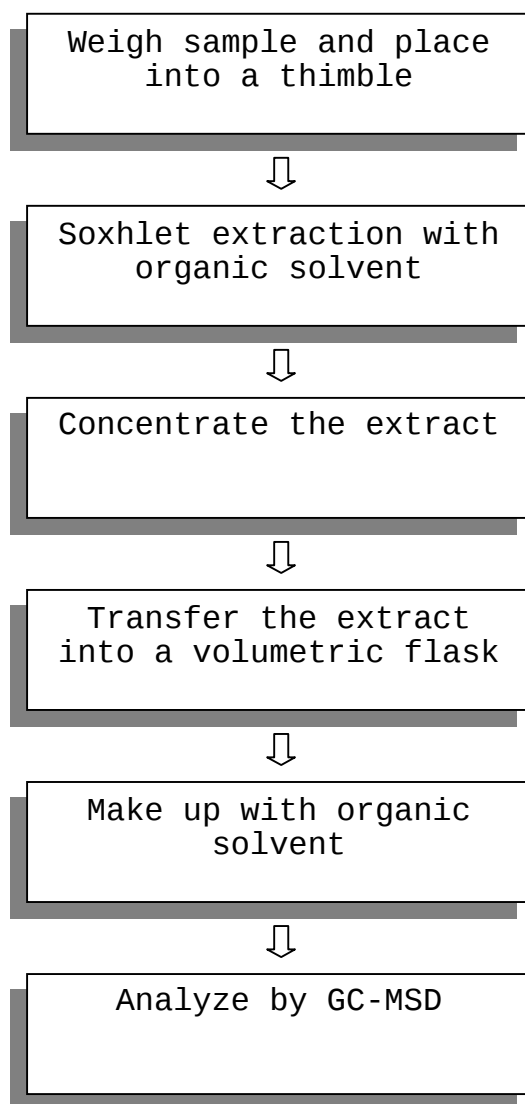
**TEST REPORT**

NUMBER: SHAH00287551

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCDD (Hexabromocyclododecane) CONTENT



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287551

**TESTS CONDUCTED**



\*\*\*\*\*

END OF REPORT



**TEST REPORT**

NUMBER: SHAH00287560

APPLICANT: LITTELFUSE, INC.  
800 E. NORTHWEST HWY  
ATTN: A. CESISTA/ K. BACILA

DATE: NOV 01, 2011

**SAMPLE DESCRIPTION:**

One (1) submitted sample said to be **Pale blue ink.**

Part Description : Ink - pale blue.

Part Number : 425913.

Date Sample Received : Oct.25, 2011.

Date Test Started : Oct.25, 2011.

\*\*\*\*\*

**TESTS CONDUCTED:**

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

\*\*\*\*\*

TO BE CONTINUED

PREPARED AND CHECKED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

MYRA LV  
CHEMICAL LAB SENIOR MANAGER

AUTHORIZED BY:  
FOR INTERTEK TESTING SERVICES  
LTD., SHANGHAI

STEPHEN TSANG  
GENERAL MANAGER

**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED

1 PHTHALATE CONTENT TEST

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

| <u>TESTED COMPOUND</u>            | <u>RESULT (% ,W/W)</u> | <u>LIMIT(% ,W/W)</u><br><u>(MAX. )</u> |
|-----------------------------------|------------------------|----------------------------------------|
| DIBUTYL PHTHALATE (DBP)           | ND                     | ---                                    |
| DI(2-ETHYL HEXYL) PHTHALATE(DEHP) | ND                     | ---                                    |
| BENZYL BUTYL PHTHALATE (BBP)      | ND                     | ---                                    |
| SUM OF THREE PHTHALATES           | ND                     | 0.1                                    |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII  
ITEMS 51 & 52 OF THE REACH REGULATION (EC) NO. 1907/2006  
& AMENDMENT NO.552/2009 (FORMERLY KNOWN AS DIRECTIVE  
2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN  
CARE ARTICLES.

DETECTION LIMIT = 0.01%(W/W)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE

\*\*\*\*\*

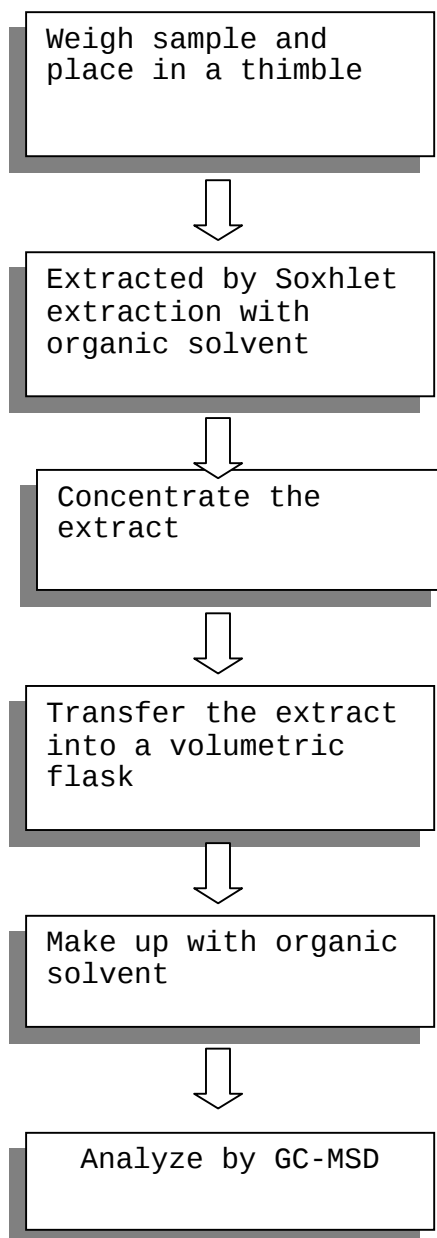
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



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TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED

2 (I) Test Result Summary :

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

Remarks: ppm = Parts per million based on weight of tested sample =  
 mg/kg  
 ND = Not detected

Responsibility Of Chemist : Ken He

(II) Test Method:

| <u>Testing Item</u> | <u>Testing Method</u>                                                                                      | <u>Reporting Limit</u> |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------------|
| Halogen Content     | With reference to EN 14582:2007 by<br>combustion flask with oxygen and<br>determined by ion chromatography | 50 ppm                 |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*  
 TO BE CONTINUED

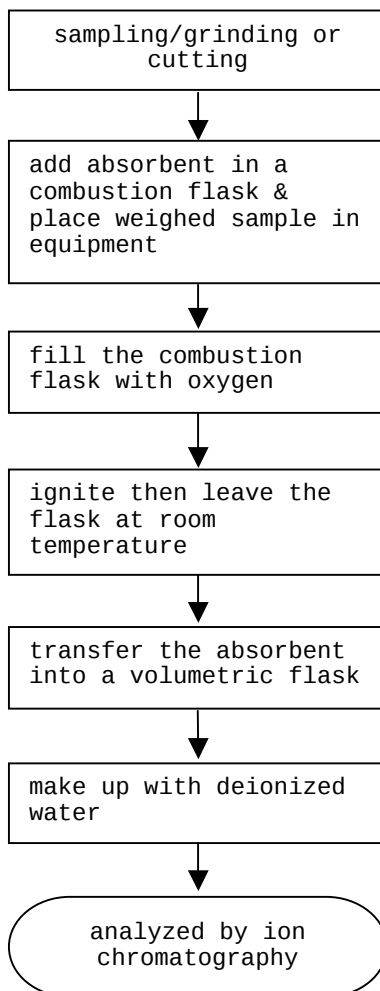
**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED

(III) Measurement Flowchart:

Test For Halogen Content  
Reference Standard: EN 14582



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TO BE CONTINUED

## TEST REPORT

NUMBER: SHAH00287560

### TESTS CONDUCTED

#### 3 (I) Test Result Summary :

| <u>Testing Item</u>                           | <u>Result (ppm)</u> |
|-----------------------------------------------|---------------------|
| <b>Heavy Metal</b>                            |                     |
| Cadmium (Cd) content                          | ND                  |
| Lead (Pb) content                             | ND                  |
| Mercury (Hg) content                          | ND                  |
| Chromium VI (Cr <sup>6+</sup> ) content       | ND                  |
| <b>Polybrominated Biphenyls (PBBs)</b>        |                     |
| Monobrominated Biphenyls (MonoBB)             | ND                  |
| Dibrominated Biphenyls (DiBB)                 | ND                  |
| Tribrominated Biphenyls (TriBB)               | ND                  |
| Tetrabrominated Biphenyls (TetraBB)           | ND                  |
| Pentabrominated Biphenyls (PentaBB)           | ND                  |
| Hexabrominated Biphenyls (HexaBB)             | ND                  |
| Heptabrominated Biphenyls (HeptaBB)           | ND                  |
| Octabrominated Biphenyls (OctaBB)             | ND                  |
| Nonabrominated Biphenyls (NonaBB)             | ND                  |
| Decabrominated Biphenyl (DecaBB)              | ND                  |
| <b>Polybrominated Diphenyl Ethers (PBDEs)</b> |                     |
| Monobrominated Diphenyl Ethers (MonoBDE)      | ND                  |
| Dibrominated Diphenyl Ethers (DiBDE)          | ND                  |
| Tribrominated Diphenyl Ethers (TriBDE)        | ND                  |
| Tetrabrominated Diphenyl Ethers (TetraBDE)    | ND                  |
| Pentabrominated Diphenyl Ethers (PentaBDE)    | ND                  |
| Hexabrominated Diphenyl Ethers (HexaBDE)      | ND                  |
| Heptabrominated Diphenyl Ethers (HeptaBDE)    | ND                  |
| Octabrominated Diphenyl Ethers (OctaBDE)      | ND                  |
| Nonabrominated Diphenyl Ethers (NonaBDE)      | ND                  |
| Decabrominated Diphenyl Ether (DecaBDE)       | ND                  |

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED

Remarks: ppm = Parts per million = mg/kg  
ND = Not detected

Responsibility Of Chemist : Dent Fang / Ken He

(II) RoHS Requirement:

| <u>Restricted Substances</u>            | <u>Limits</u>  |
|-----------------------------------------|----------------|
| Cadmium (Cd) Content                    | 0.01% (100ppm) |
| Lead (Pb) Content                       | 0.1% (1000ppm) |
| Mercury (Hg) Content                    | 0.1% (1000ppm) |
| Chromium VI (Cr <sup>6+</sup> ) Content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs)         | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs)  | 0.1% (1000ppm) |

The above limits were quoted from 2002/95/EC and amendment  
2005/618/EC for homogeneous material.

\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED

(III) Test Method:

| <u>Testing Item</u>                     | <u>Testing Method</u>                                                                                                                                           | <u>Reporting Limit</u> |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Cadmium (Cd) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Lead (Pb) content                       | With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. | 2 ppm                  |
| Mercury (Hg) content                    | With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.      | 2 ppm                  |
| Chromium VI (Cr <sup>6+</sup> ) content | With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.                                      | 1 ppm                  |
| Polybrominated Biphenyls (PBBs)         | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |
| Polybrominated Diphenyl Ethers (PBDEs)  | With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.           | 5 ppm                  |

Remark: Reporting limit = Quantitation limit of analyte in sample

\*\*\*\*\*

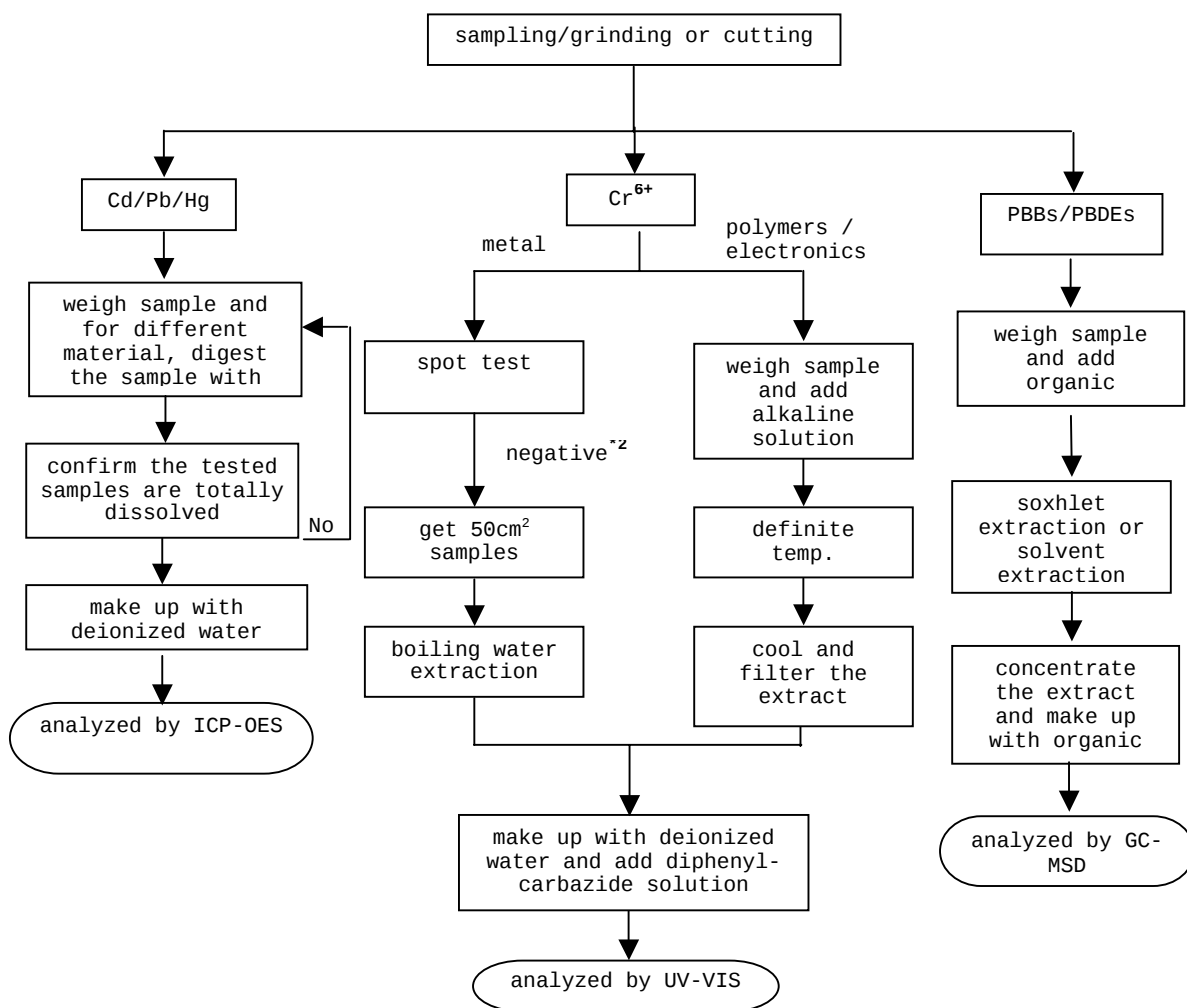
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED  
 (IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents  
 Reference Standard: IEC 62321 edition 1.0:2008



\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED

REMARKS:

\*1: List of appropriate acid:

| <u>Material</u> | <u>Acid added for digestion</u>                                                            |
|-----------------|--------------------------------------------------------------------------------------------|
| Polymers        | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals          | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics     | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

\*\*\*\*\*

TO BE CONTINUED



**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED

4 PHthalate Content Test

WITH REFERENCE TO ASTM D3421, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

|                                    | RESULT (% , w/w) | LIMIT (% , w/w)<br>(MAX.) |
|------------------------------------|------------------|---------------------------|
| DIBUTYL PHTHALATE (DBP)            | ND               | 0.1                       |
| DI(2-ETHYL HEXYL) PHTHALATE (DEHP) | ND               | 0.1                       |
| BENZYL BUTYL PHTHALATE (BBP)       | ND               | 0.1                       |

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER PRODUCT SAFETY IMPROVEMENT ACT 2008 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01% (w/w)

ND = NOT DETECTED

% = PERCENTAGE BASED ON DRY WEIGHT OF SAMPLE

\*\*\*\*\*

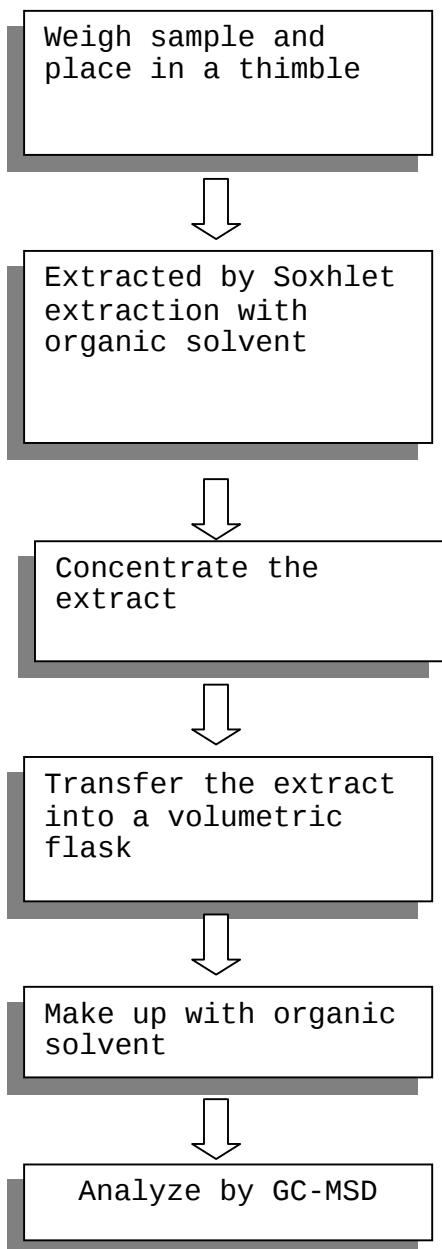
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED  
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS



\*\*\*\*\*  
TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED

5 (A) TEST RESULT SUMMARY:

| <u>TESTING ITEM</u>            | <u>RESULT (ppm)</u> |
|--------------------------------|---------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | ND                  |

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

| <u>TESTING ITEM</u>            | <u>TESTING METHOD</u>                                                        | <u>REPORTING LIMIT</u> |
|--------------------------------|------------------------------------------------------------------------------|------------------------|
| HBCDD (HEXABROMOCYCLODODECANE) | WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS | 10 ppm                 |

DATE SAMPLE RECEIVED : OCT.25, 2011

TESTING PERIOD : OCT.25, 2011 TO OCT.31, 2011

\*\*\*\*\*

TO BE CONTINUED

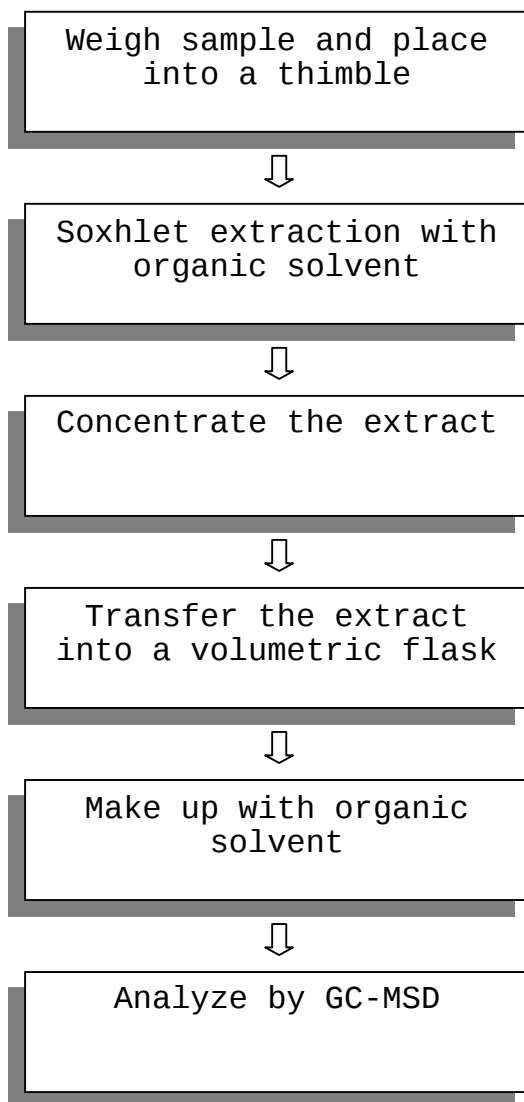
**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCDD (Hexabromocyclododecane) CONTENT



\*\*\*\*\*

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00287560

TESTS CONDUCTED



\*\*\*\*\*  
END OF REPORT

## Test Report

No. : CE/2012/14843A Date : 2012/02/04 Page : 1 of 24

CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



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

Sample Description : CERAMIC  
Style/Item No. : C610  
Sample Receiving Date : 2012/01/30  
Testing Period : 2012/01/30 TO 2012/02/04

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

Conclusion : Based on the performed tests on submitted samples, the test results of Cadmium, Lead, Mercury, Hexavalent Chromium Cr(VI), PBBs and PBDEs comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

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

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## Test Report

No. : CE/2012/14843A Date : 2012/02/04 Page : 2 of 24

CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



### Test Result(s)

PART NAME No.1 : WHITE CERAMIC

| Test Item(s)                                                                      | Unit  | Method                                                                                         | MDL  | Result   | Limit |
|-----------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------|------|----------|-------|
|                                                                                   |       |                                                                                                |      | No.1     |       |
| Cadmium (Cd)                                                                      | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES.                                    | 2    | n.d.     | 100   |
| Lead (Pb)                                                                         | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES.                                    | 2    | 178      | 1000  |
| Mercury (Hg)                                                                      | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES.                                    | 2    | n.d.     | 1000  |
| Hexavalent Chromium Cr(VI)                                                        | mg/kg | With reference to IEC 62321: 2008 and performed by UV-VIS.                                     | 2    | n.d.     | 1000  |
| Polychlorinated Biphenyls (PCBs)<br>(CAS No.: 1336-36-3)                          | mg/kg | With reference to US EPA 3540C method. Analysis was performed by GC/MS.                        | 0.5  | n.d.     | -     |
| Polychlorinated Terphenyls (PCTs)                                                 | mg/kg | With reference to US EPA 3540C method. Analysis was performed by GC/MS.                        | 0.5  | n.d.     | -     |
| Polychlorinated Naphthalene (PCNs)                                                | mg/kg | With reference to US EPA 3540C method. Analysis was performed by GC/MS.                        | 5    | n.d.     | -     |
| Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (CAS No.: 85535-84-8) | %     | With reference to US EPA 3540C method. Analysis was performed by GC/MS.                        | 0.01 | n.d.     | -     |
| Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)                         | mg/kg | With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS. | 10   | n.d.     | -     |
| PFOA (CAS No.: 335-67-1)                                                          | mg/kg | With reference to US EPA 3540C: 1996 method for PFOA Content. Analysis was performed by LC/MS. | 10   | n.d.     | -     |
| Formaldehyde (CAS No.: 50-00-0)                                                   | mg/kg | With reference to ISO 17226-1(2008). Analysis was performed by HPLC/DAD.                       | 3    | n.d.     | -     |
| PVC                                                                               | **    | Analysis was performed by FTIR and FLAME Test.                                                 | -    | Negative | -     |

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# Test Report

No. : CE/2012/14843A Date : 2012/02/04 Page : 3 of 24

CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



| Test Item(s)                                            | Unit  | Method                                                                  | MDL   | Result | Limit |
|---------------------------------------------------------|-------|-------------------------------------------------------------------------|-------|--------|-------|
|                                                         |       |                                                                         |       | No.1   |       |
| BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)         | %     | With reference to EN 14372. Analysis was performed by GC/MS.            | 0.003 | n.d.   | -     |
| DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7) | %     | With reference to EN 14372. Analysis was performed by GC/MS.            | 0.003 | n.d.   | -     |
| DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0)      | %     | With reference to EN 14372. Analysis was performed by GC/MS.            | 0.01  | n.d.   | -     |
| DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0)      | %     | With reference to EN 14372. Analysis was performed by GC/MS.            | 0.01  | n.d.   | -     |
| DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)         | %     | With reference to EN 14372. Analysis was performed by GC/MS.            | 0.003 | n.d.   | -     |
| DBP (Dibutyl phthalate) (CAS No.: 84-74-2)              | %     | With reference to EN 14372. Analysis was performed by GC/MS.            | 0.003 | n.d.   | -     |
| Monomethyl dibromodiphenyl methane (DBBT)               | mg/kg | With reference to US EPA 8270D method. Analysis was performed by GC/MS. | 0.5   | n.d.   | -     |
| Monomethyl dichlorodiphenyl methane (Ugilec121)         | mg/kg | With reference to US EPA 8270D method. Analysis was performed by GC/MS. | 0.5   | n.d.   | -     |
| Monomethyl tetrachlorodiphenyl methane (Ugilec141)      | mg/kg | With reference to US EPA 8270D method. Analysis was performed by GC/MS. | 0.5   | n.d.   | -     |
| <b>Organic-tin compounds</b>                            |       |                                                                         |       |        |       |
| Tributyl Tin (TBT)                                      | mg/kg | With reference to DIN 38407-13. Analysis was performed by GC/FPD.       | 0.03  | n.d.   | -     |
| Triphenyl Tin (TphT)                                    | mg/kg | With reference to DIN 38407-13. Analysis was performed by GC/FPD.       | 0.03  | n.d.   | -     |
| <b>Halons</b>                                           |       |                                                                         |       |        |       |
| Halon-1211 (CAS No.: 353-59-3)                          | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS.  | 1     | n.d.   | -     |
| Halon-1301 (CAS No.: 75-63-8)                           | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS.  | 1     | n.d.   | -     |
| Halon-2402 (CAS No.: 124-73-2)                          | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS.  | 1     | n.d.   | -     |

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## Test Report

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CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



| Test Item(s)                                | Unit  | Method                                                                                | MDL | Result   | Limit |
|---------------------------------------------|-------|---------------------------------------------------------------------------------------|-----|----------|-------|
|                                             |       |                                                                                       |     | No.1     |       |
| Halogen                                     |       |                                                                                       |     |          |       |
| Halogen-Fluorine (F) (CAS No.: 14762-94-8)  | mg/kg | With reference to BS EN 14582:2007. Analysis was performed by IC.                     | 50  | n.d.     | -     |
| Halogen-Chlorine (Cl) (CAS No.: 22537-15-1) | mg/kg | With reference to BS EN 14582:2007. Analysis was performed by IC.                     | 50  | n.d.     | -     |
| Halogen-Bromine (Br) (CAS No.: 10097-32-2)  | mg/kg | With reference to BS EN 14582:2007. Analysis was performed by IC.                     | 50  | n.d.     | -     |
| Halogen-Iodine (I) (CAS No.: 14362-44-8)    | mg/kg | With reference to BS EN 14582:2007. Analysis was performed by IC.                     | 50  | n.d.     | -     |
| Asbestos                                    |       |                                                                                       |     |          |       |
| Actinolite (CAS No.: 77536-66-4)            | %     | With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD. | 1   | Negative | -     |
| Amosite (CAS No.: 12172-73-5)               | %     | With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD. | 1   | Negative | -     |
| Anthophyllite (CAS No.: 77536-67-5)         | %     | With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD. | 1   | Negative | -     |
| Chrysotile (CAS No.: 12001-29-5)            | %     | With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD. | 1   | Negative | -     |
| Crocidolite (CAS No.: 12001-28-4)           | %     | With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD. | 1   | Negative | -     |
| Tremolite (CAS No.: 77536-68-6)             | %     | With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD. | 1   | Negative | -     |

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# Test Report

No. : CE/2012/14843A Date : 2012/02/04 Page : 5 of 24

CERAMTEC GMBH  
MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



| Test Item(s)                                | Unit  | Method                                                           | MDL | Result<br>No.1 | Limit |
|---------------------------------------------|-------|------------------------------------------------------------------|-----|----------------|-------|
| <b>Sum of PBBs</b>                          | mg/kg | With reference to IEC 62321: 2008 and performed by GC/MS.        | -   | n.d.           | 1000  |
| 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.           | -     |
| <b>Sum of PBDEs</b>                         |       |                                                                  | -   | n.d.           | 1000  |
| 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.           | -     |
| <b>AZO</b>                                  |       |                                                                  |     |                |       |
| 1): 4-AMINODIPHENYL (CAS No.: 92-67-1)      | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.           | -     |
| 2): BENZIDINE (CAS No.: 92-87-5)            | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.           | -     |
| 3): 4-CHLORO-O-TOLUIDINE (CAS No.: 95-69-2) | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.           | -     |
| 4): 2-NAPHTHYLAMINE (CAS No.: 91-59-8)      | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.           | -     |
| 5): O-AMINOAZOTOLUENE (CAS No.: 97-56-3)    | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.           | -     |

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## Test Report

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CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



| Test Item(s)                                                       | Unit  | Method                                                           | MDL | Result | Limit |
|--------------------------------------------------------------------|-------|------------------------------------------------------------------|-----|--------|-------|
|                                                                    |       |                                                                  |     | No.1   |       |
| 6): 2-AMINO-4-NITROTOLUENE (CAS No.: 99-55-8)                      | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 7): P-CHLOROANILINE (CAS No.: 106-47-8)                            | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 8): 2,4-DIAMINOANISOLE (CAS No.: 615-05-4)                         | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 9): 4,4'-DIAMINODIPHENYLMETHANE (CAS No.: 101-77-9)                | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 10): 3,3'-DICHLOOROBENZIDINE (CAS No.: 91-94-1)                    | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 11): 3,3'-DIMETHOXYBENZIDINE (CAS No.: 119-90-4)                   | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 12): 3,3'-DIMETHYLBENZIDINE (CAS No.: 119-93-7)                    | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 13): 3,3'-DIMETHYL-4,4'-DIAMINODIPHENYLMETHANE (CAS No.: 838-88-0) | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 14): P-CRESIDINE (2-METHOXY-5-METHYLANILINE) (CAS No.: 120-71-8)   | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 15): 4,4'-METHYLENE-BIS- (2-CHLOROANILINE) (CAS No.: 101-14-4)     | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 16): 4,4'-OXYDIANILINE (CAS No.: 101-80-4)                         | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 17): 4,4'-THIODIANILINE (CAS No.: 139-65-1)                        | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 18): O-TOLUIDINE (CAS No.: 95-53-4)                                | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 19): 2,4-TOLUYLENEDIAMINE (CAS No.: 95-80-7)                       | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 20): 2,4,5-TRIMETHYLANILINE (CAS No.: 137-17-7)                    | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |
| 21): O-ANISIDINE (CAS No.: 90-04-0)                                | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS. | 3   | n.d.   | -     |

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## Test Report

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CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



| Test Item(s)                               | Unit  | Method                                                                 | MDL | Result | Limit |
|--------------------------------------------|-------|------------------------------------------------------------------------|-----|--------|-------|
|                                            |       |                                                                        |     | No.1   |       |
| 22): P-AMINOAZOBENZENE (CAS No.: 60-09-3)  | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS.       | 3   | n.d.   | -     |
| 23): 2,4-XYLIDINE (CAS No.: 95-68-1)       | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS.       | 3   | n.d.   | -     |
| 24): 2,6-XYLIDINE (CAS No.: 87-62-7)       | mg/kg | With reference to LFGB 82.02-2. Analysis was performed by GC/MS.       | 3   | n.d.   | -     |
| <b>CFC's (Chlorofluorocarbons)</b>         |       |                                                                        |     |        |       |
| <b>Group I</b>                             |       |                                                                        |     |        |       |
| Chlorofluorocarbon-11 (CAS No.: 75-69-4)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chlorofluorocarbon-12 (CAS No.: 75-71-8)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chlorofluorocarbon-113 (CAS No.: 76-13-1)  | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chlorofluorocarbon-114 (CAS No.: 76-14-2)  | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chlorofluorocarbon-115 (CAS No.: 76-15-3)  | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| <b>Group III</b>                           |       |                                                                        |     |        |       |
| Chlorofluorocarbon-13 (CAS No.: 75-72-9)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chlorofluorocarbon-111 (CAS No.: 354-56-3) | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chlorofluorocarbon-112 (CAS No.: 76-12-0)  | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chlorofluorocarbon-211 (CAS No.: 422-78-6) | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |

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# Test Report

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CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



| Test Item(s)                                  | Unit  | Method                                                                 | MDL | Result | Limit |
|-----------------------------------------------|-------|------------------------------------------------------------------------|-----|--------|-------|
|                                               |       |                                                                        |     | No.1   |       |
| Chlorofluorocarbon-212 (CAS No.: 3182-26-1)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chlorofluorocarbon-213 (CAS No.: 2354-06-5)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chlorofluorocarbon-214 (CAS No.: 29255-31-0)  | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chlorofluorocarbon-215 (CAS No.: 4259-43-2)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chlorofluorocarbon-216 (CAS No.: 661-97-2)    | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chlorofluorocarbon-217 (CAS No.: 422-86-6)    | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| <b>CHCs (Chlorinate hydrocarbon)</b>          |       |                                                                        |     |        |       |
| 1,1,1,2-Tetrachloroethane (CAS No.: 630-20-6) | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| 1,1,1-Trichloroethane (CAS No.: 71-55-6)      | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| 1,1,2,2-Tetrachloroethane (CAS No.: 79-34-5)  | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| 1,1,2-Trichloroethane (CAS No.: 79-00-5)      | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| 1,1-Dichloroethane (CAS No.: 75-34-3)         | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| 1,1-Dichloroethene (CAS No.: 75-35-4)         | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |

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CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



| Test Item(s)                                  | Unit  | Method                                                                 | MDL | Result | Limit |
|-----------------------------------------------|-------|------------------------------------------------------------------------|-----|--------|-------|
|                                               |       |                                                                        |     | No.1   |       |
| 1,1-Dichloropropene (CAS No.: 563-58-6)       | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| 1,2,3-Trichloropropane (CAS No.: 96-18-4)     | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| 1,2-Dichloroethane (CAS No.: 107-06-2)        | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| 1,2-Dichloropropane (CAS No.: 78-87-5)        | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| 1,3-Dichloropropane (CAS No.: 142-28-9)       | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| 2,2-Dichloropropane (CAS No.: 594-20-7)       | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Carbon tetrachloride (CAS No.: 56-23-5)       | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chloroethane (CAS No.: 75-00-3)               | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chloroform (CAS No.: 67-66-3)                 | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Chloromethane (CAS No.: 74-87-3)              | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| cis-1,2-Dichloroethene (CAS No.: 156-59-2)    | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| cis-1,3-Dichloropropene (CAS No.: 10061-01-5) | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |

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CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



| Test Item(s)                                    | Unit  | Method                                                                 | MDL | Result | Limit |
|-------------------------------------------------|-------|------------------------------------------------------------------------|-----|--------|-------|
|                                                 |       |                                                                        |     | No.1   |       |
| Hexachlorobutadiene (CAS No.: 87-68-3)          | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Methylene Chloride (CAS No.: 75-09-2)           | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Tetrachloroethene (CAS No.: 127-18-4)           | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| trans-1,2-Dichloroethene (CAS No.: 156-60-5)    | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| trans-1,3-Dichloropropene (CAS No.: 10061-02-6) | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| Trichloroethylene (CAS No.: 79-01-6)            | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| <b>HCFCs (Hydrochlorofluorocarbons)</b>         |       |                                                                        |     |        |       |
| HCFC-21 (CAS No.: 75-43-4)                      | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-22 (CAS No.: 75-45-6)                      | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-31 (CAS No.: 593-70-4)                     | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-121 (CAS No.: 354-14-3)                    | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-122 (CAS No.: 354-21-2)                    | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |

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CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



| Test Item(s)                   | Unit  | Method                                                                 | MDL | Result | Limit |
|--------------------------------|-------|------------------------------------------------------------------------|-----|--------|-------|
|                                |       |                                                                        |     | No.1   |       |
| HCFC-123 (CAS No.: 306-83-2)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-124 (CAS No.: 2837-89-0)  | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-131 (CAS No.: 359-28-4)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-132b (CAS No.: 1649-08-7) | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-133a (CAS No.: 75-88-7)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-141b (CAS No.: 1717-00-6) | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-142b (CAS No.: 75-68-3)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-221 (CAS No.: 422-26-4)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-222 (CAS No.: 422-49-1)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-223 (CAS No.: 422-52-6)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-224 (CAS No.: 422-54-8)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-225ca (CAS No.: 422-56-0) | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |

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CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



| Test Item(s)                   | Unit  | Method                                                                 | MDL | Result | Limit |
|--------------------------------|-------|------------------------------------------------------------------------|-----|--------|-------|
|                                |       |                                                                        |     | No.1   |       |
| HCFC-225cb (CAS No.: 507-55-1) | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-226 (CAS No.: 431-87-8)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-231 (CAS No.: 421-94-3)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-232 (CAS No.: 460-89-9)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-233 (CAS No.: 7125-84-0)  | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-234 (CAS No.: 425-94-5)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-235 (CAS No.: 460-92-4)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-241 (CAS No.: 666-27-3)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-242 (CAS No.: 460-63-9)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-243 (CAS No.: 460-69-5)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-244                       | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-251 (CAS No.: 421-41-0)   | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |

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CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



| Test Item(s)                  | Unit  | Method                                                                 | MDL | Result | Limit |
|-------------------------------|-------|------------------------------------------------------------------------|-----|--------|-------|
|                               |       |                                                                        |     | No.1   |       |
| HCFC-252 (CAS No.: 819-00-1)  | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-253 (CAS No.: 460-35-5)  | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-261 (CAS No.: 420-97-3)  | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-262 (CAS No.: 421-02-03) | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |
| HCFC-271 (CAS No.: 430-55-7)  | mg/kg | With reference to US EPA 5021 method. Analysis was performed by GC/MS. | 1   | n.d.   | -     |

### Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. \*\* = Qualitative analysis (No Unit)
6. Negative = Undetectable / Positive = Detectable
7. Asbestos : Negative = "< 1.0 %", Positive = "> 1.0 %"

### PFOS Reference Information : POPs - (EU) 757/2010

Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1µg/m².

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## Test Report

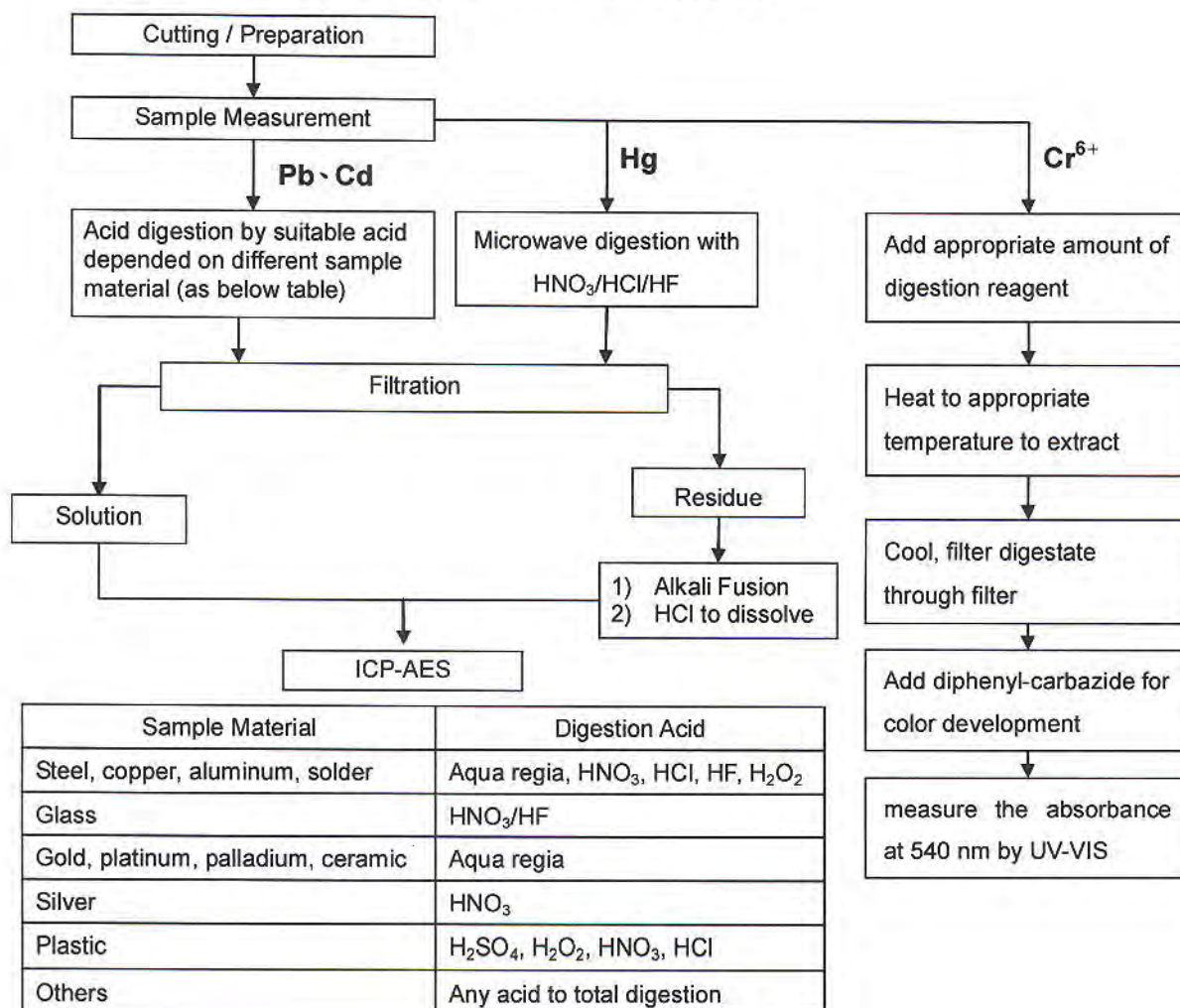
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CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.  
(Cr<sup>6+</sup> test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



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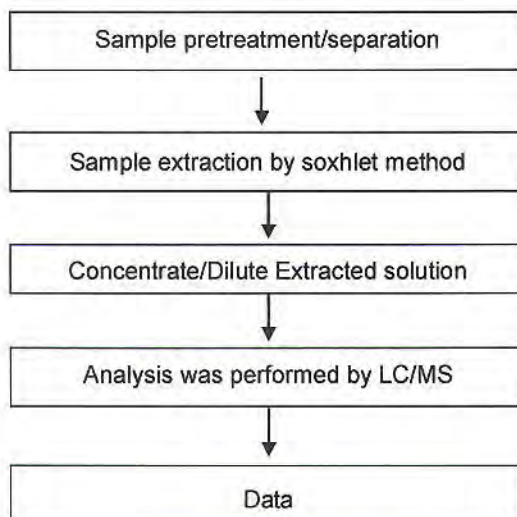
MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



### Analytical flow chart of Soxhlet extraction (LC/MS) procedure

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

**[ Test Items: PFOS/PFOA 、 Benzotriazole ]**



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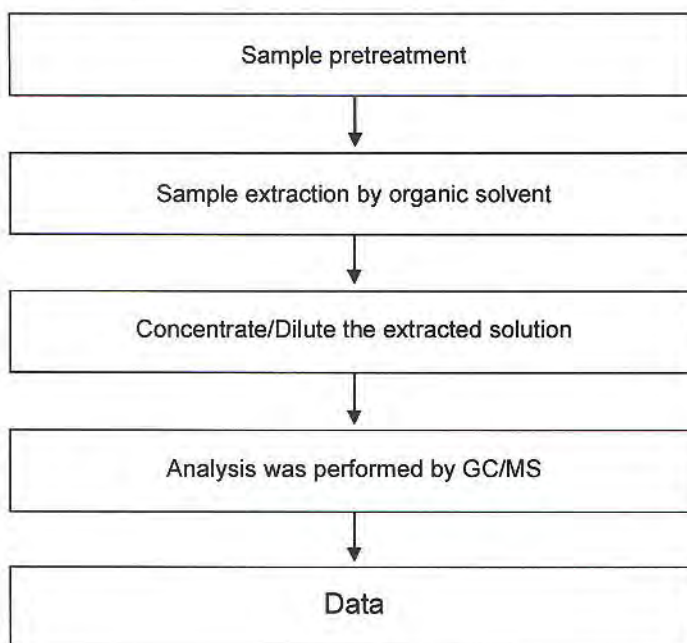
CERAMTEC GMBH

MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



### Chlorinated Flame retardant analytical flow chart

- 1) Name of the person who made measurement: Barry Tseng
  - 2) Name of the person in charge of measurement: Troy Chang
- Reference method: US EPA 8270D, US EPA 3540
  - Test Items: PCBs, PCNs, PCTs, Mirex, CP, MCPP



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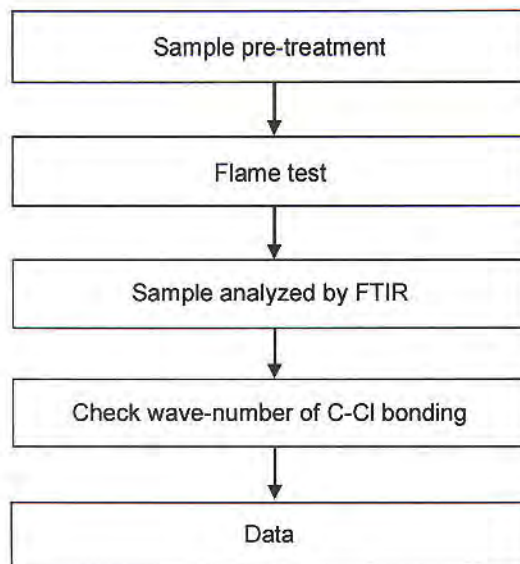
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### Analysis flow chart for determination of PVC in material

- Name of the person who made measurement: Ginny Chen
- Name of the person in charge of measurement: Troy Chang



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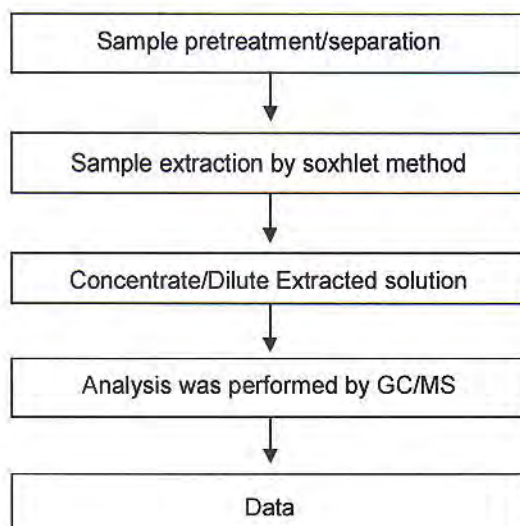
MULTIFUNCTIONAL CERAMICS LUITPOLDSTRASSE 15 D-91207 LAUF, GERMANY



### Analytical flow chart of Soxhlet extraction (GC/MS) procedure

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

【 Test Items: Phthalate 、 Benzotriazole 、 HBCDD 、 NP 、 DBBT 、  
Organic phosphorus compounds 】



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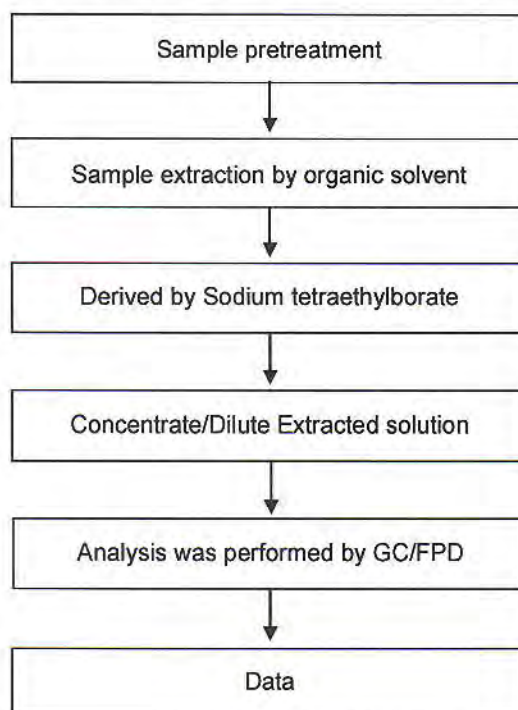
CERAMTEC GMBH

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### Analytical flow chart of Organic-Tin content

- Name of the person who made measurement: Ginny Chen
- Name of the person in charge of measurement: Troy Chang



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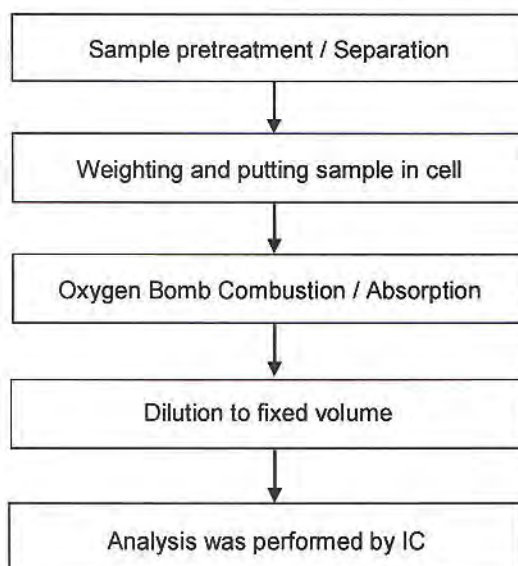
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### Analytical flow chart of halogen content

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



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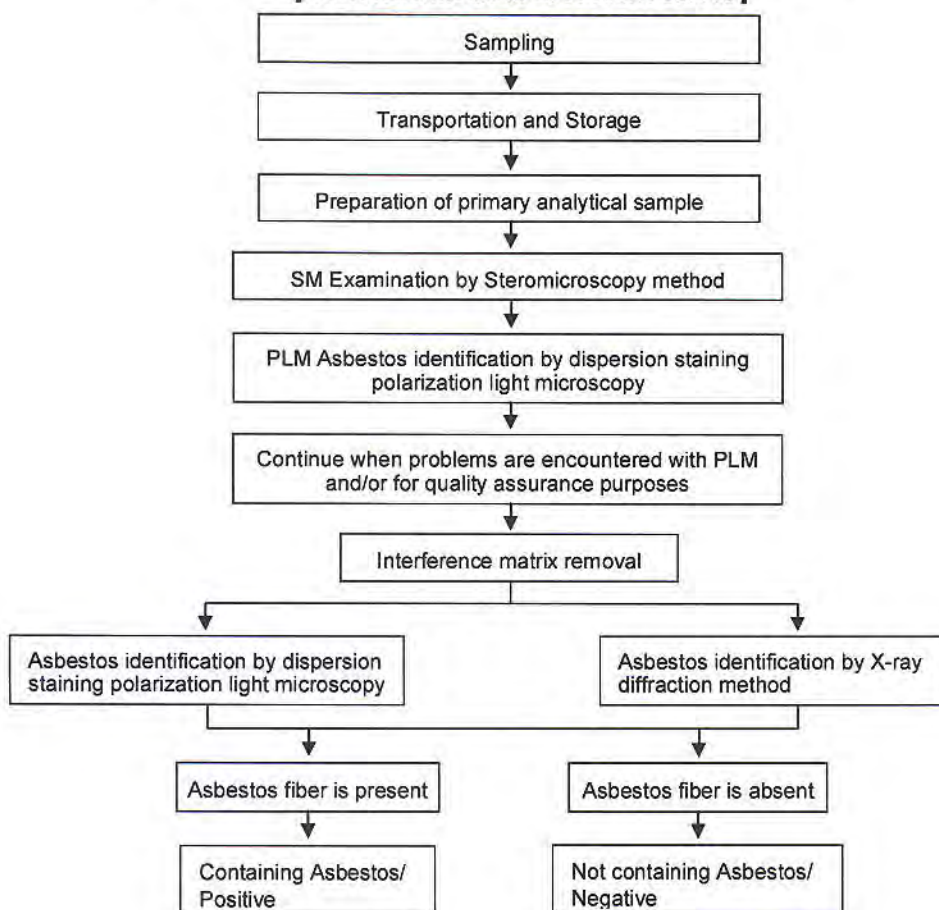
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### Analysis flow chart for determination of Asbestos

- 1) Name of the person who made measurement: Victor Kao
  - 2) Name of the person in charge of measurement: Wendy Wei
- [ Reference method: EPA 600/R-93/116 ]**



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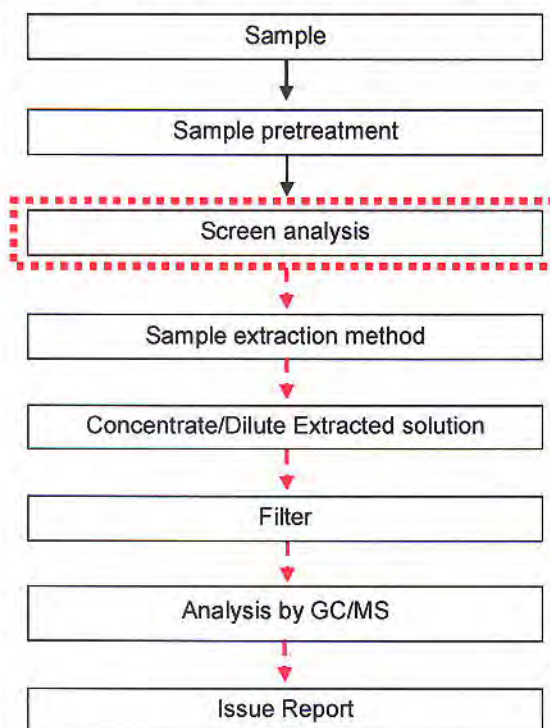


### Analytical flow chart

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

#### [ Test Items: PBB/PBDE, TBBP-A-bis ]

First testing process → Optional screen process ..... Confirmation process ->



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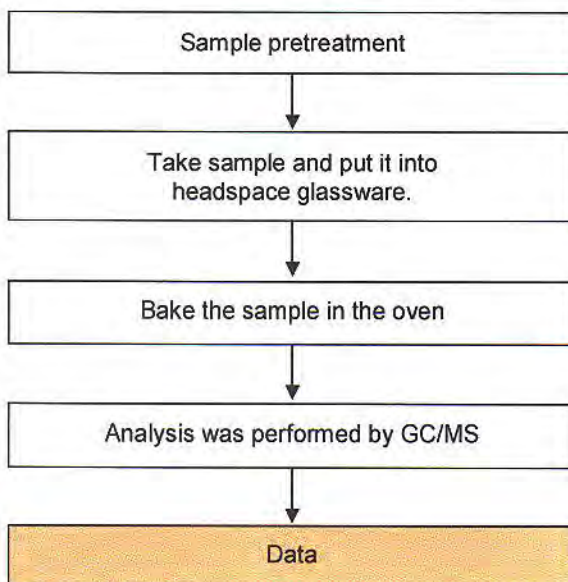
CERAMTEC GMBH

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### Analytical flow chart of volatile organic compounds (VOCs)

- Name of the person who made measurement : Chun Wu
  - Name of the person in charge of measurement : Shinjyh Chen
- 【Reference method : US EPA 5021】



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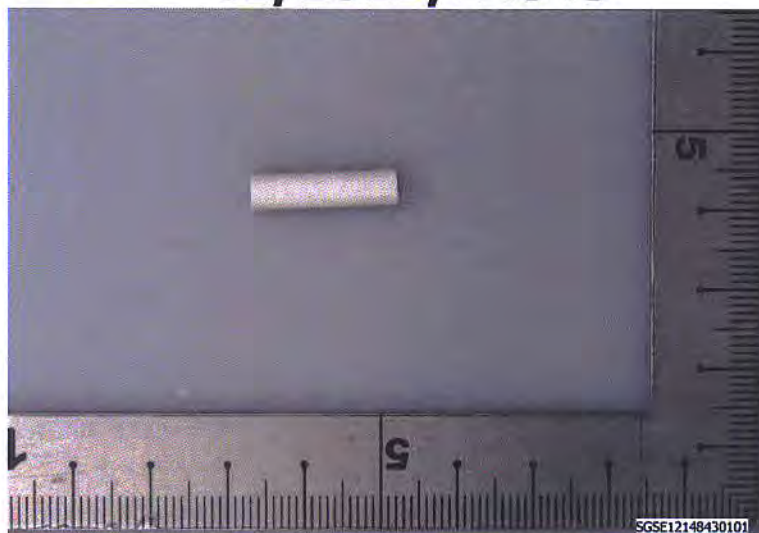
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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

### CE/2012/14843



\*\* End of Report \*\*

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