



ICP Test Report Certification Packet

Company name: Littelfuse, Inc.

Product Series: 3AG Cartridge

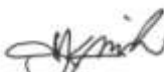
Product #: 313P Series

Issue Date: November 29, 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 3AG Cartridge 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

Total Parts	Raw Material Part Number	Raw Material Description	Page(s)
1	910-005	Cap	3-6
2	909-002-002	Body (Soda Lime Glass tube)	7-11
3	909-194-00x (909-194-001)	Body	12-19
4	11-0595 (082xxx-001)	Wire-Cu99.9MSn	20-26
5	10-0691 (497xxx)	Wire-Ni99.9MAg	27-33
6	YTW102 (692535-003)	Solder	34-38
7	AIM230 Fast Core H RSA605 (692539-003)	Solder	39-43
8	648102	Yarn	44-48
9	RD series (899-4xx-1)	Carbon Film Resistor- RoHS	49-62
10	RD series (899-4xx-1)	Carbon Film Resistor- Halogen	63-66
11	3M 3779-PG (087244)	HMA - RoHS	67-71
12	3M 3779-PG (087244)	HMA - Halogen	72-75
13	425900	Ink - Orange	76-86
14	425902	Ink-Black	87-97
15	425903	Ink-Blue	98-108
16	425906	Ink - Brown	109-119
17	425907	Ink- Green	120-130
18	425911	Ink-Violet	131-141
19	912-228	Spring (Copper Beryllium Alloy Rod)	142-145



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

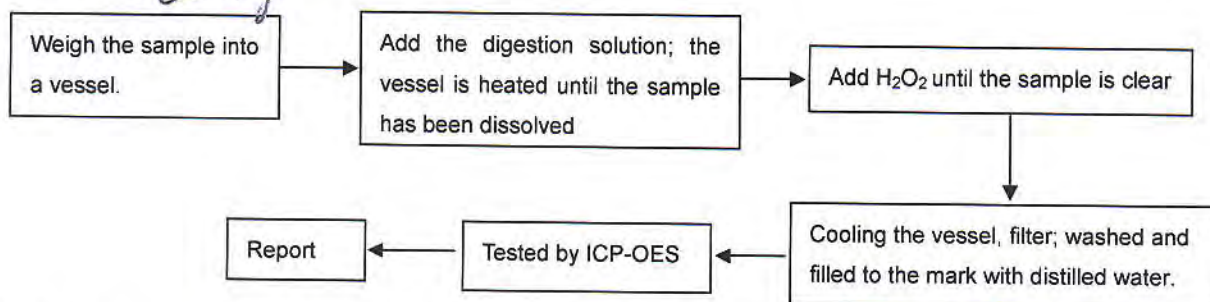
Date: Dec.15, 2011

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Test Flow:

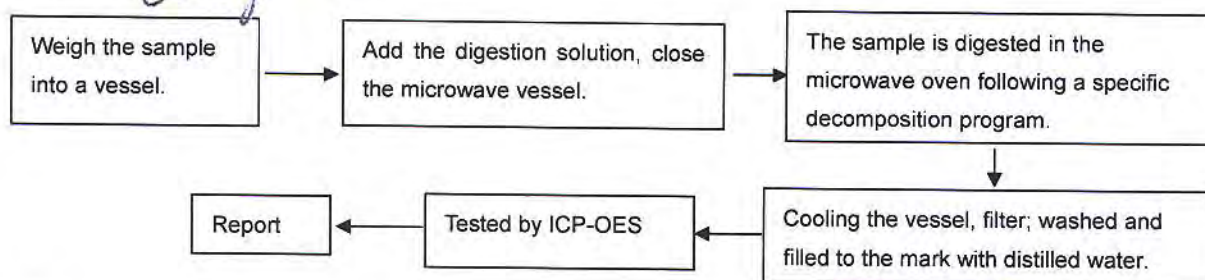
1. To Determine Lead, Cadmium Content: (Metal substrate)

Tested by: *Condy*



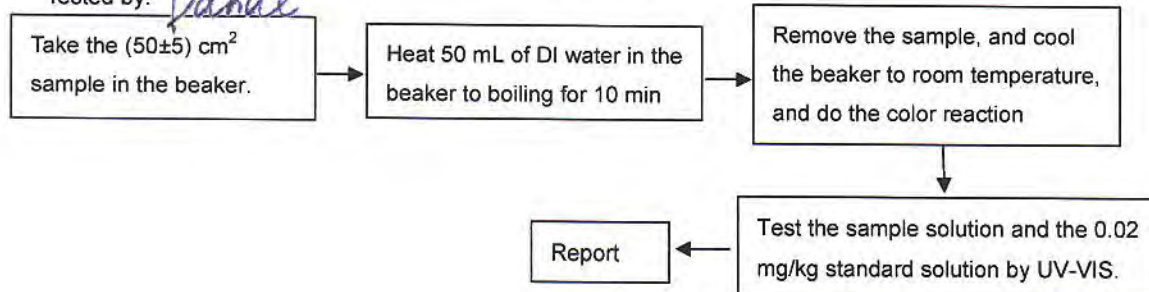
2. To Determine Mercury Content: (Metal substrate)

Tested by: *Condy*



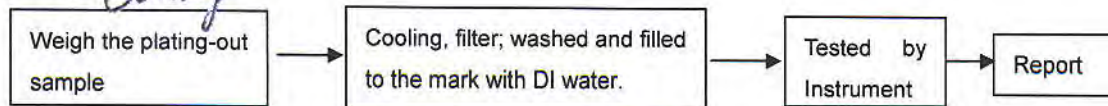
3. To Determine Hexavalent Chromium Content (boiling- water- extraction): (Metal substrate)

Tested by: *Danae*



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

Tested by: *Condy*



TEST REPORT

NO.: A002E11121307-1R02

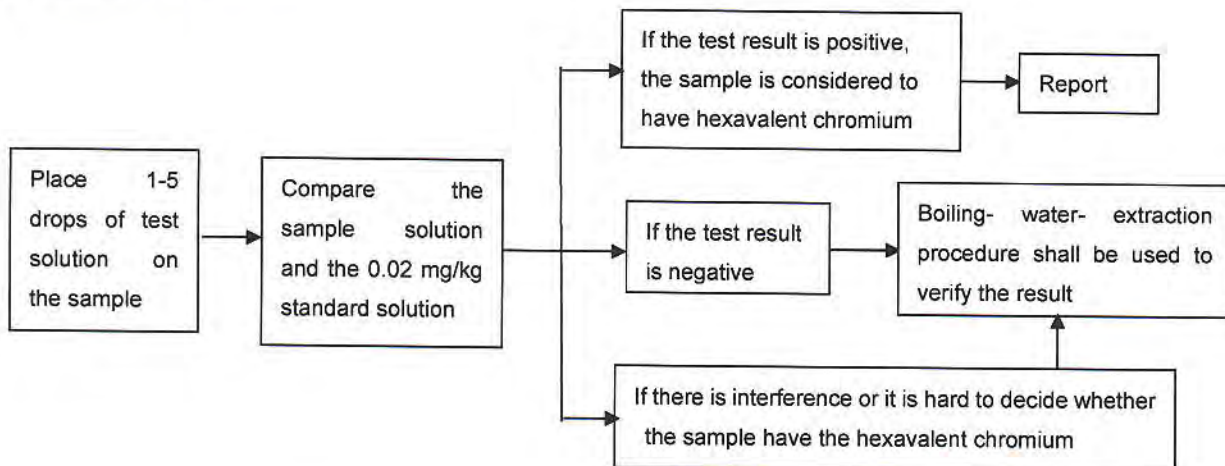
Date: Dec.15, 2011

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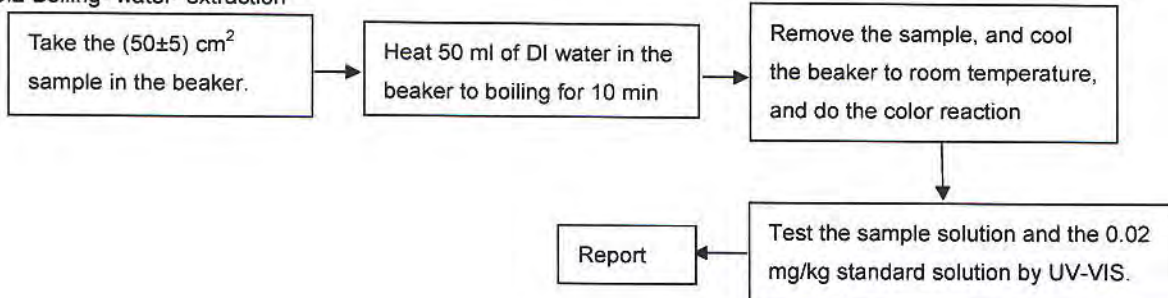
5. To Determine Hexavalent Chromium Content in colorless and colored chromate coating on metals: (Plating)

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

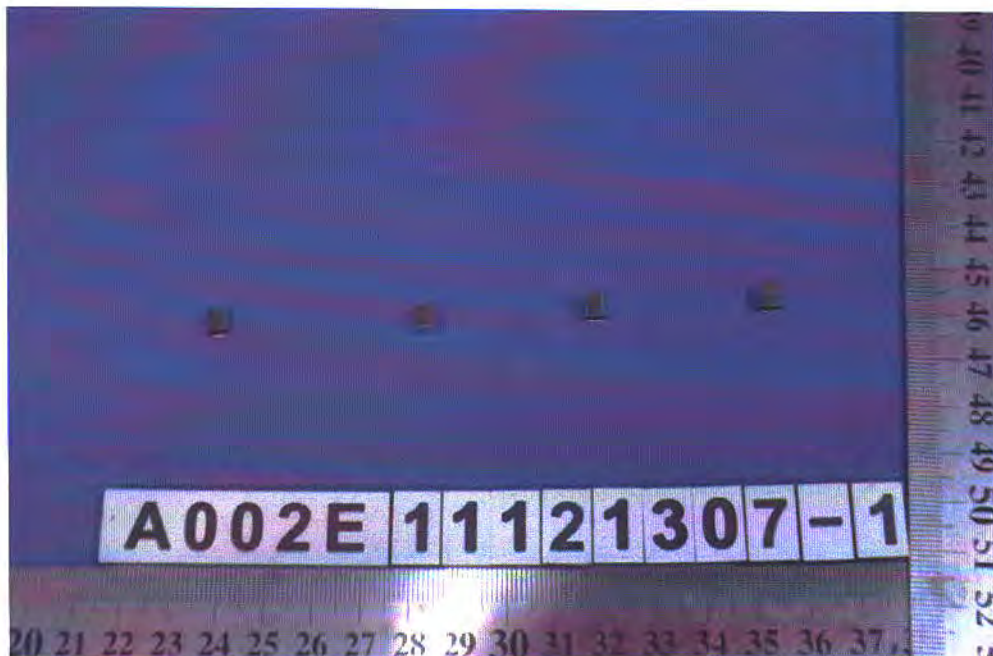
Date: Dec.15, 2011

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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. CANEC1207912201

Date: 26 Jun 2012

Page 1 of 5

XIAMEN LICHUN ELECTRONIC ELEMENT CO.,LTD

42-2XINGLIN WEST RD.,361022,JIMEI DISTRICT,XIAMEN,,FUJIAN,P.R.C

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

SGS Job No. : XM13901119EC - XM

Date of Sample Received : 18 Jun 2012

Testing Period : 18 Jun 2012 - 26 Jun 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.

Lucy Wu
Approved Signatory

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Test Report

No. CANEC1207912201

Date: 26 Jun 2012

Page 2 of 5

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	CAN12-079122.001	Transparent glass tube

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)	1,000	mg/kg	2	229
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

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Test Report

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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 the directive 2011/65/EU, Annex II

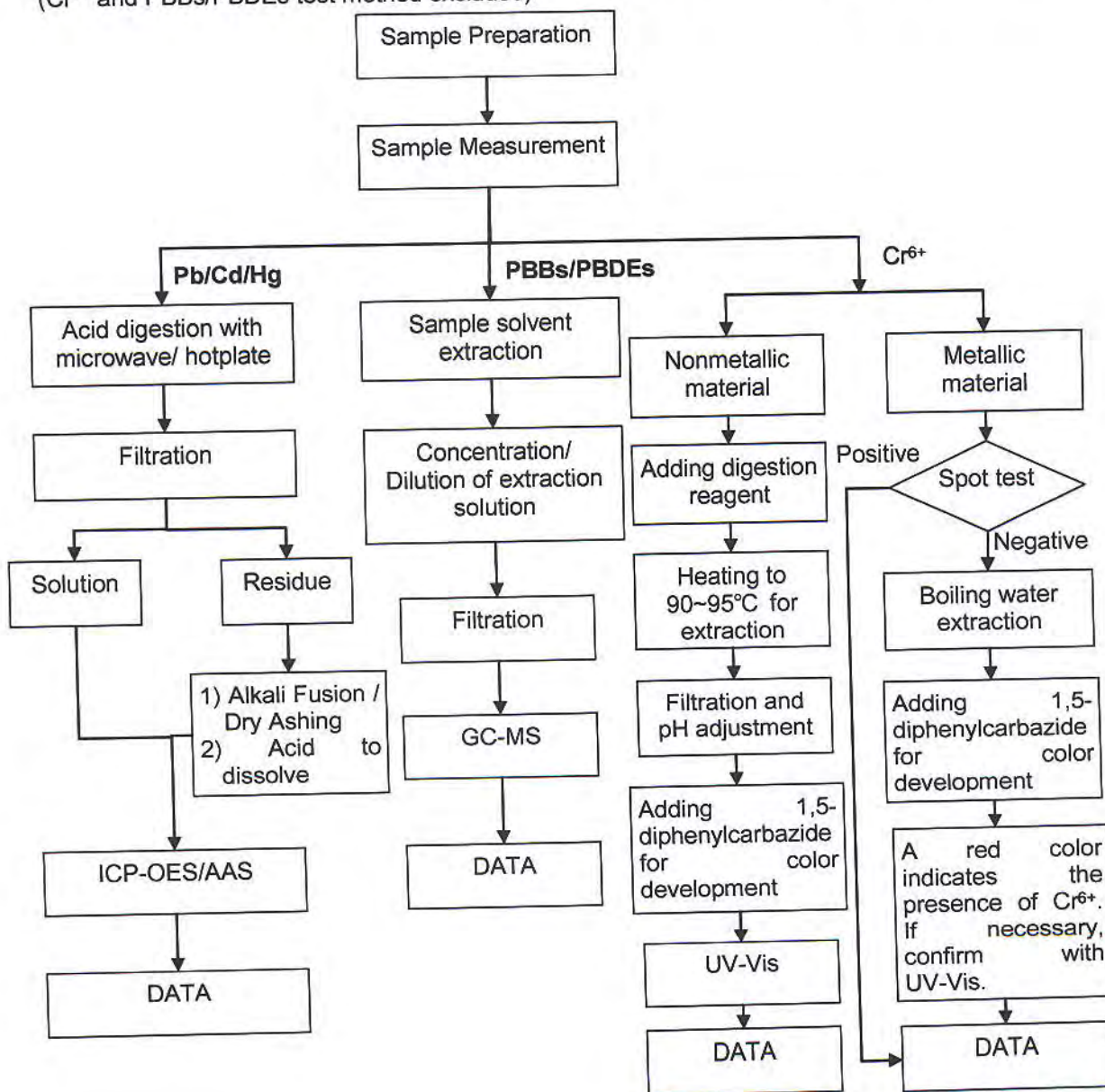
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ATTACHMENTS

RoHS Testing Flow Chart

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



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Date: 26 Jun 2012

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

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TEST REPORT

NUMBER: SHAH00335582

APPLICANT: LITTELFUSE, INC.
800 E. NORTHWEST HWY
ATTN: A.DIVIETRO/D.UNTIEDT

DATE: AUG 20, 2012

SAMPLE DESCRIPTION:

ONE(1) SUBMITTED SAMPLE SAID TO BE **Transparent glass.**

ITEM NAME : Glass body.

ITEM NO. : 909-194-002.

TESTS CONDUCTED:

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

TO BE CONTINUED

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

JACOB LIN
GENERAL MANAGER

TEST REPORT

NUMBER: SHAH00335582

TESTS CONDUCTED

1 (I) Test Result Summary:

TESTING ITEM	RESULT (ppm)
HEAVY METAL	
CADMIUM (Cd) CONTENT	ND
LEAD (Pb) CONTENT	ND
MERCURY (Hg) CONTENT	ND
CHROMIUM VI (Cr ⁶⁺) CONTENT	ND
POLYBROMINATED BIPHENYLS (PBBs)	
MONOBROMINATED BIPHENYLS (MonoBB)	ND
DIBROMINATED BIPHENYLS (DiBB)	ND
TRIBROMINATED BIPHENYLS (TriBB)	ND
TETRABROMINATED BIPHENYLS (TetraBB)	ND
PENTABROMINATED BIPHENYLS (PentaBB)	ND
HEXABROMINATED BIPHENYLS (HexaBB)	ND
HEPTABROMINATED BIPHENYLS (HeptaBB)	ND
OCTABROMINATED BIPHENYLS (OctaBB)	ND
NONABROMINATED BIPHENYLS (NonaBB)	ND
DECABROMINATED BIPHENYL (DecaBB)	ND
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	
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
HALOGEN CONTENT	
FLUORINE (F)	ND
CHLORINE (Cl)	ND
BROMINE (Br)	ND
IODINE (I)	ND

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

RESPONSIBILITY OF CHEMIST: DENT FANG / KEN HE

TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00335582

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 ⁶⁺) CONTENT	0.1% (1000ppm)
POLYBROMINATED BIPHENYLS (PBBs)	0.1% (1000ppm)
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	0.1% (1000ppm)

THE ABOVE LIMITS WERE QUOTED FROM ROHS DIRECTIVE 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 ⁶⁺) 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 ANALYZE IN SAMPLE

TO BE CONTINUED

TEST REPORT

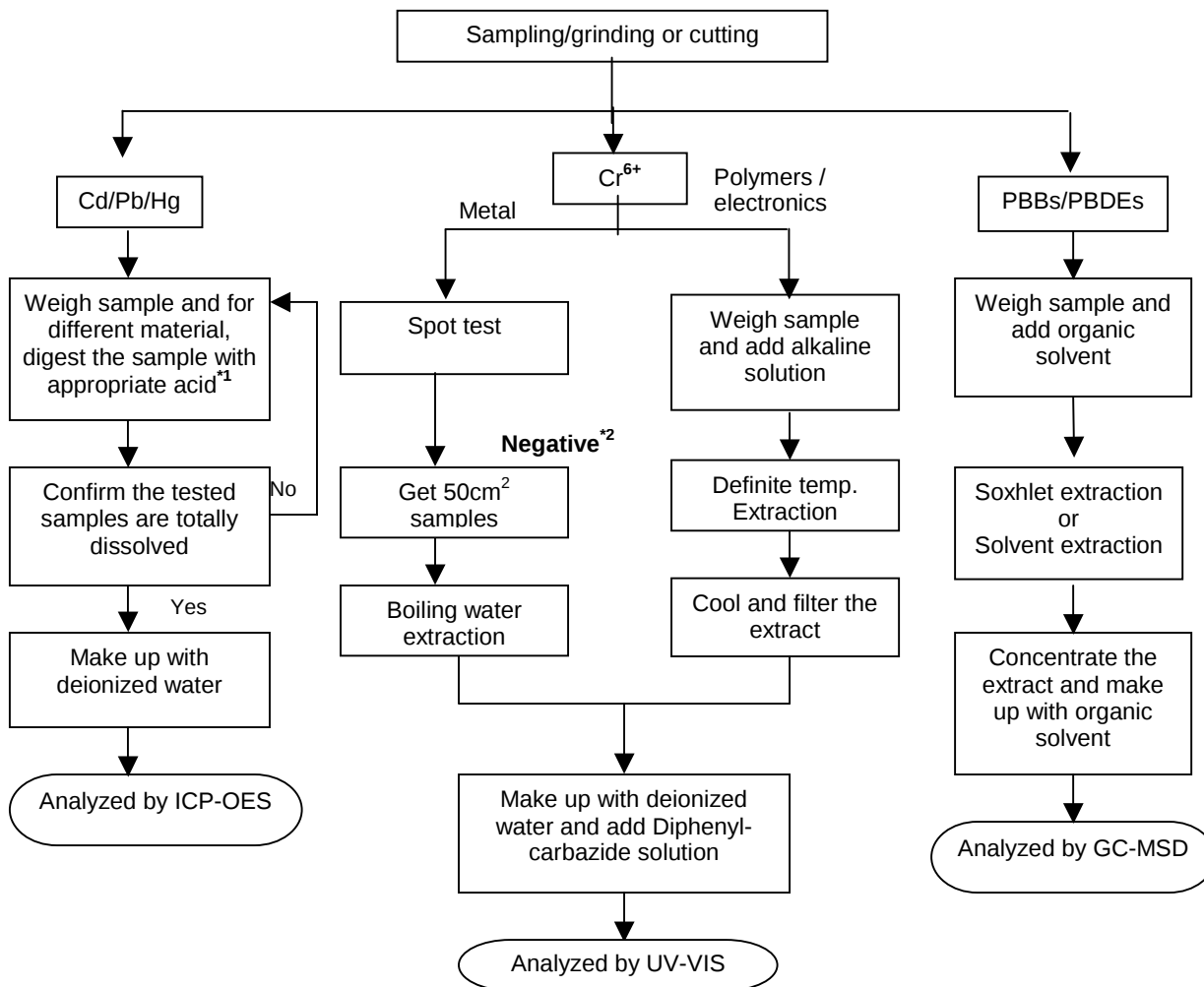
NUMBER: SHAH00335582

TESTS CONDUCTED

(IV) MEASUREMENT FLOWCHART:

TEST FOR Cd/ Pb/ Hg/ Cr (VI)/ PBBs/PBDES CONTENTS

REFERENCE STANDARD: IEC 62321 EDITION 1.0:2008



TO BE CONTINUED



TEST REPORT

NUMBER: SHAH00335582

TESTS CONDUCTED

REMARKS:

*1: LIST OF APPROPRIATE ACID:

<u>MATERIAL</u>	<u>ACID ADDED FOR DIGESTION</u>
POLYMERS	HNO ₃ , HCL, HF, H ₂ O ₂ , H ₃ BO ₃
METALS	HNO ₃ , HCL, HF
ELECTRONICS	HNO ₃ , HCL, H ₂ O ₂ , HBF ₄

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

TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00335582

TESTS CONDUCTED

2 (I) Test Result Summary :

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

Remarks: ppm = Parts per million = 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 combustion flask with oxygen and determined by ion chromatography	50 ppm

Remark: Reporting limit = Quantitation limit of analyte in sample

Date Sample Received : Aug.16, 2012
 Testing Period : Aug.16, 2012 To Aug.20, 2012

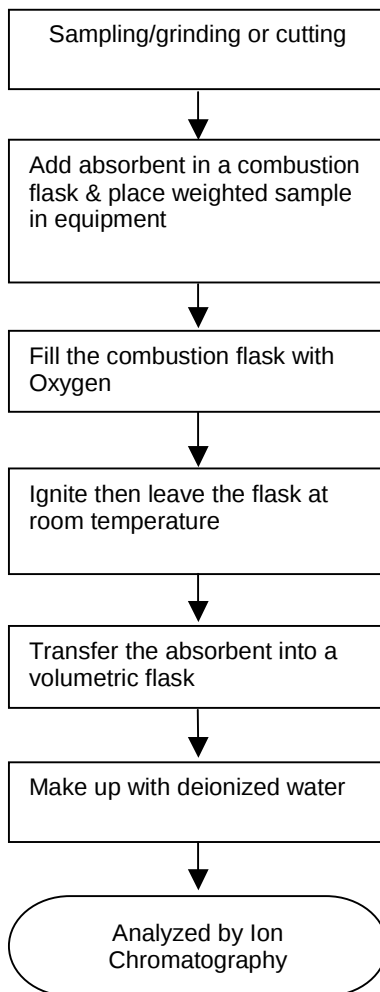
TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00335582

TESTS CONDUCTED

(V) MEASUREMENT FLOWCHART:
TEST FOR HALOGEN CONTENT
REFERENCE STANDARD: EN 14582



TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00335582

TESTS CONDUCTED



END OF REPORT

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Test Report

No. : CE/2011/B4950

Date : 2011/12/01

Page: 1 of 7

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



Test Result(s)

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

Test Item(s)	Unit	Method	MDL	Result No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg		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
Sum of PBBs	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.
Sum of PBDEs			-	n.d.
Monobromodiphenyl ether			5	n.d.
Dibromodiphenyl ether			5	n.d.
Tribromodiphenyl ether			5	n.d.
Tetrabromodiphenyl ether			5	n.d.
Pentabromodiphenyl ether			5	n.d.
Hexabromodiphenyl ether			5	n.d.
Heptabromodiphenyl ether			5	n.d.
Octabromodiphenyl ether			5	n.d.
Nonabromodiphenyl ether			5	n.d.
Decabromodiphenyl ether			5	n.d.

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



Test Item(s)	Unit	Method	MDL	Result 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)			50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)			50	n.d.
Halogen-Iodine (I) (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 cm² 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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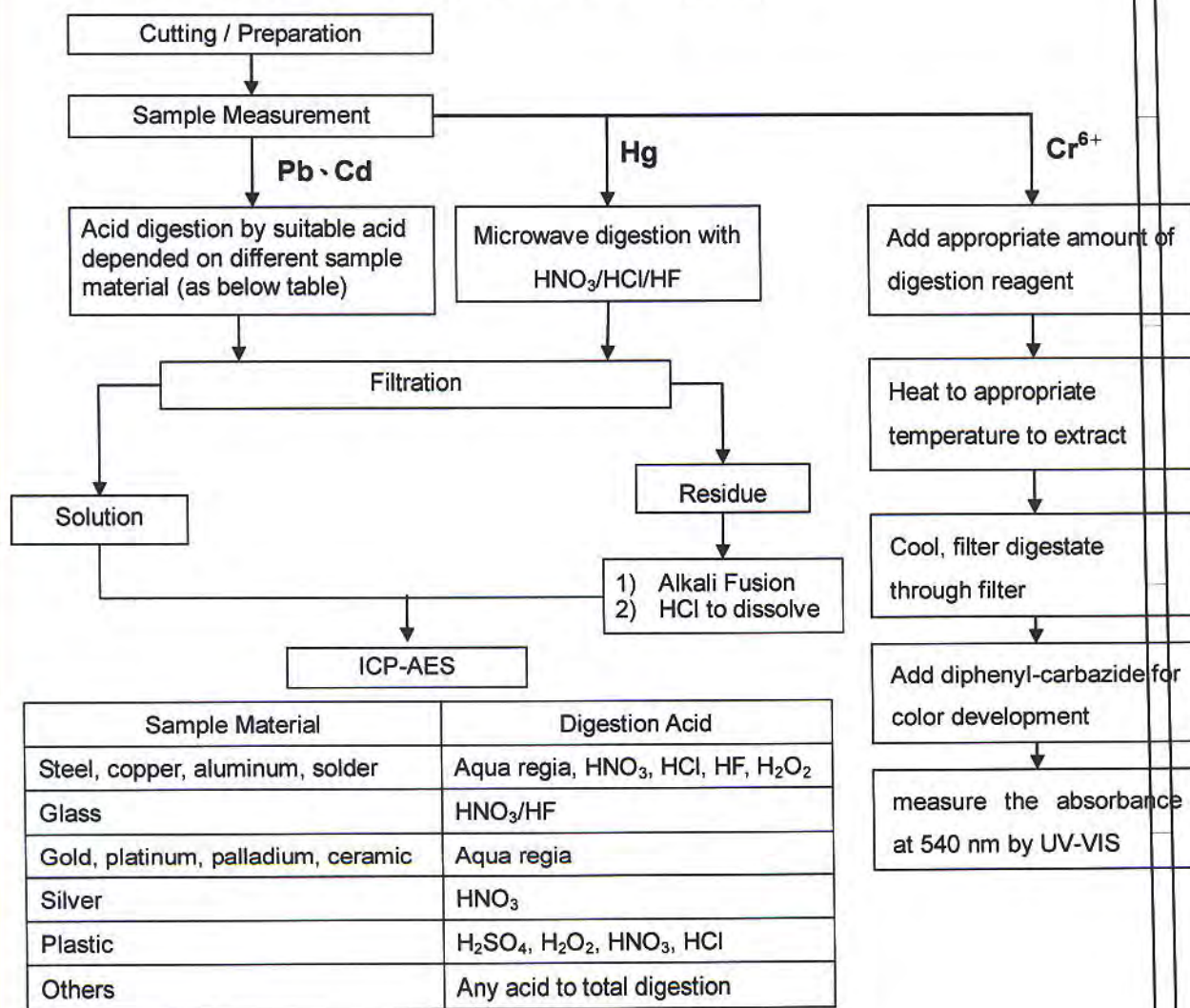
Date : 2011/12/01

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POLYFIL AG

OBERALLMENDSTRASSE 20A, CH-6300 ZUG / SWITZERLAND

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



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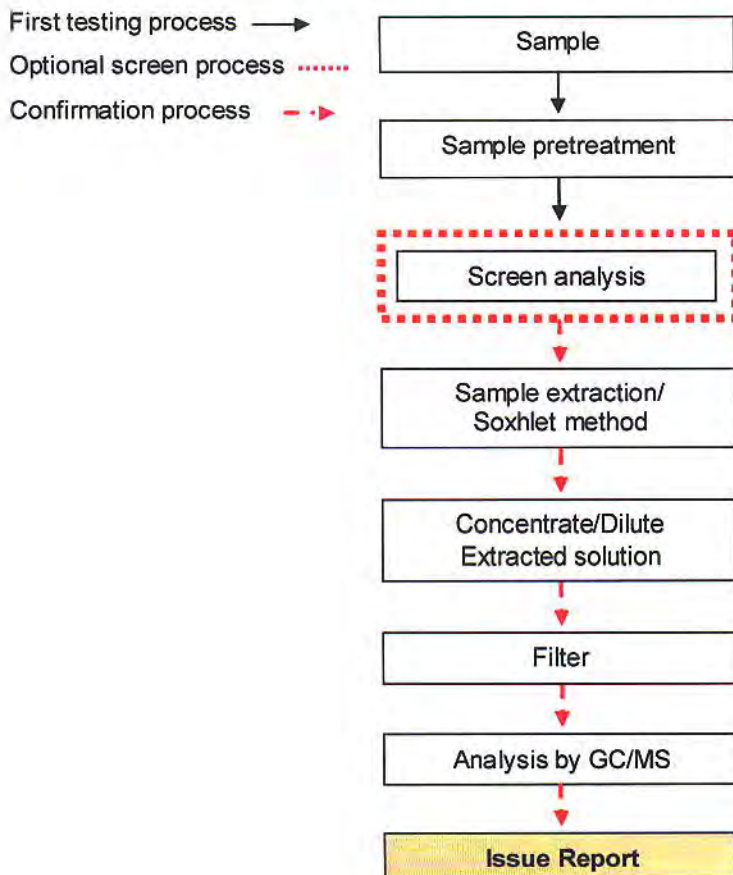
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POLYFIL AG
OBERALLMENDSTRASSE 20A, CH-6300 ZUG / SWITZERLAND



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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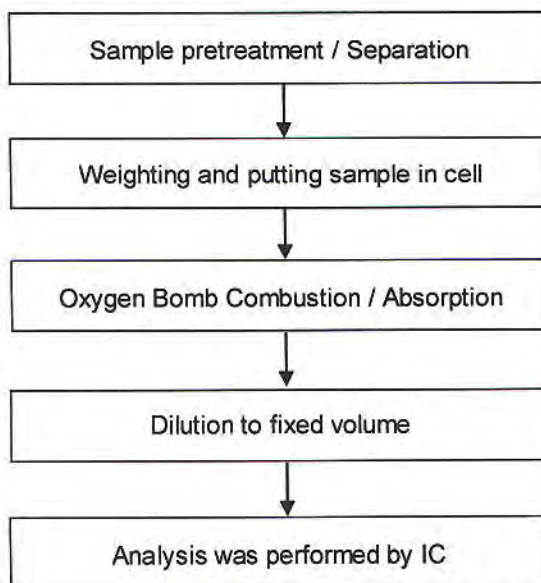
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OBERALLMENDSTRASSE 20A, CH-6300 ZUG / SWITZERLAND



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

Sample Description : Ni99.9MAG
Buyer/Order No. : 10-0691
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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POLYFIL AG

OBERALLMENDSTRASSE 20A, CH-6300 ZUG / SWITZERLAND



Test Result(s)

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

Test Item(s)	Unit	Method	MDL	Result No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	**	With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative
Sum of PBBs	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.
Sum of PBDEs			-	n.d.
Monobromodiphenyl ether			5	n.d.
Dibromodiphenyl ether			5	n.d.
Tribromodiphenyl ether			5	n.d.
Tetrabromodiphenyl ether			5	n.d.
Pentabromodiphenyl ether			5	n.d.
Hexabromodiphenyl ether			5	n.d.
Heptabromodiphenyl ether			5	n.d.
Octabromodiphenyl ether			5	n.d.
Nonabromodiphenyl ether			5	n.d.
Decabromodiphenyl ether			5	n.d.

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



Test Item(s)	Unit	Method	MDL	Result 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)			50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)			50	n.d.
Halogen-Iodine (I) (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 cm² 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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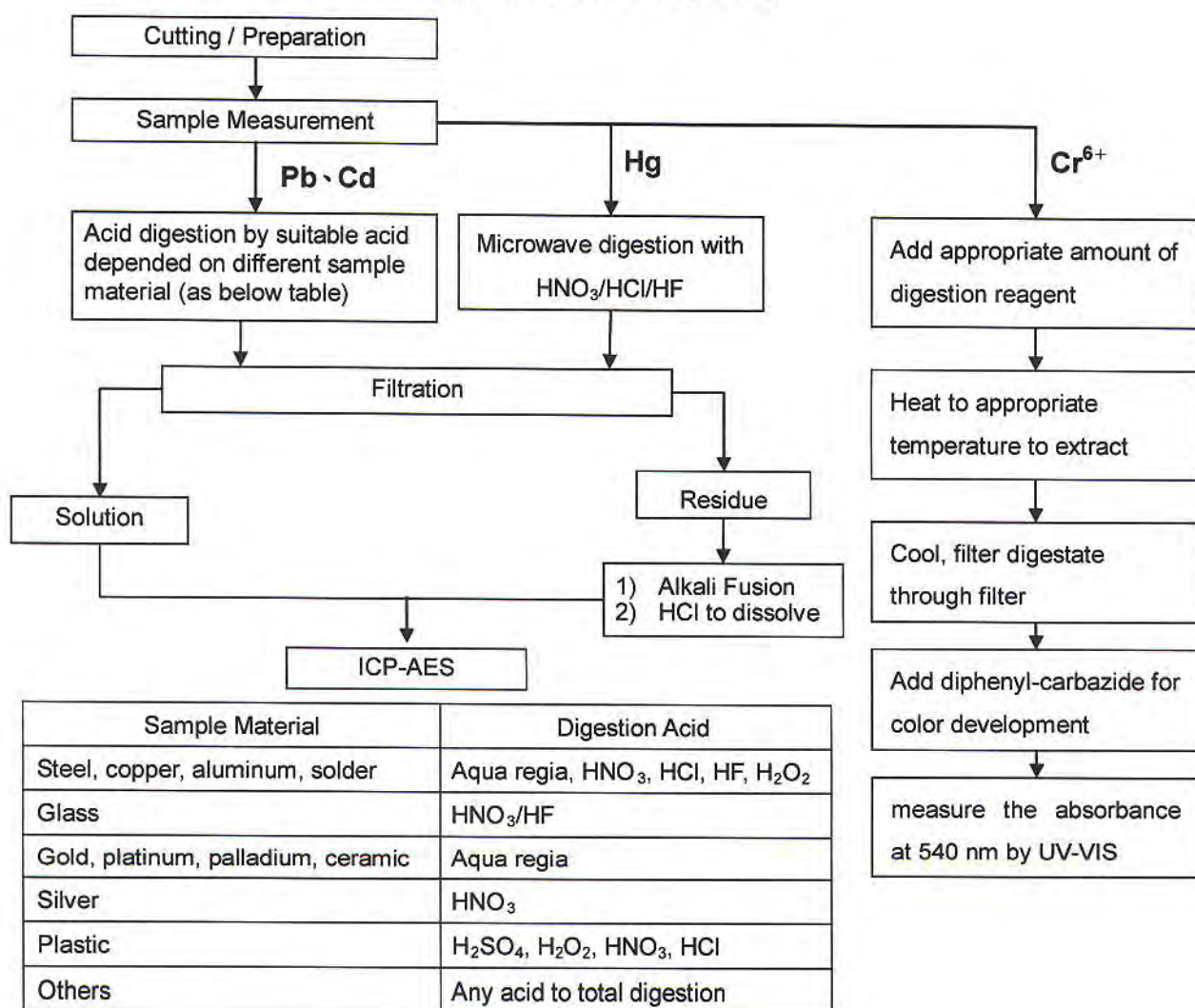
Date : 2011/12/01

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



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



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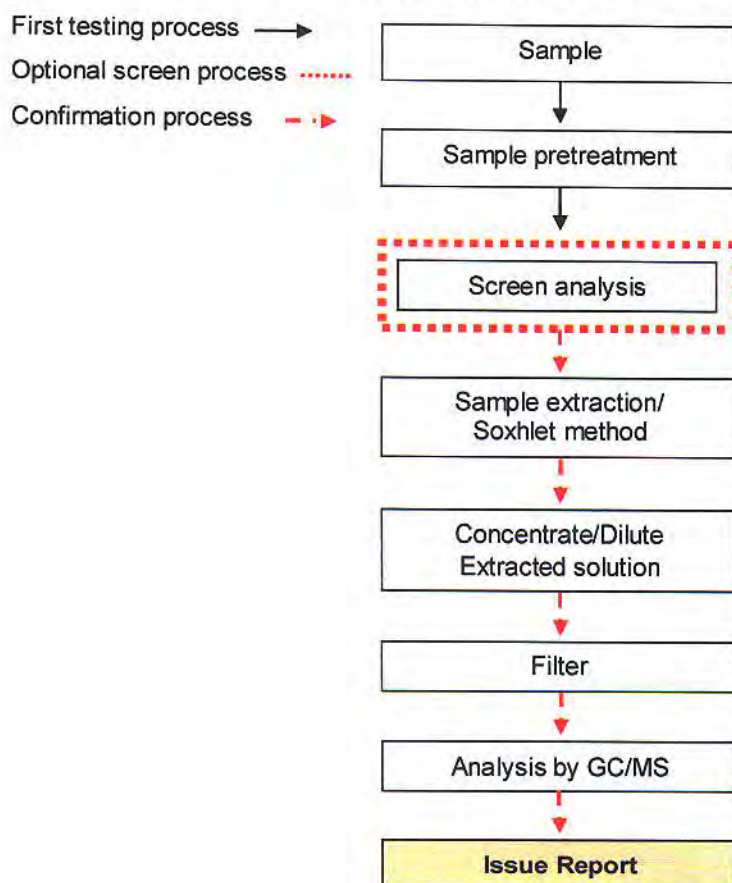
POLYFIL AG

OBERALLMENDSTRASSE 20A, CH-6300 ZUG / SWITZERLAND



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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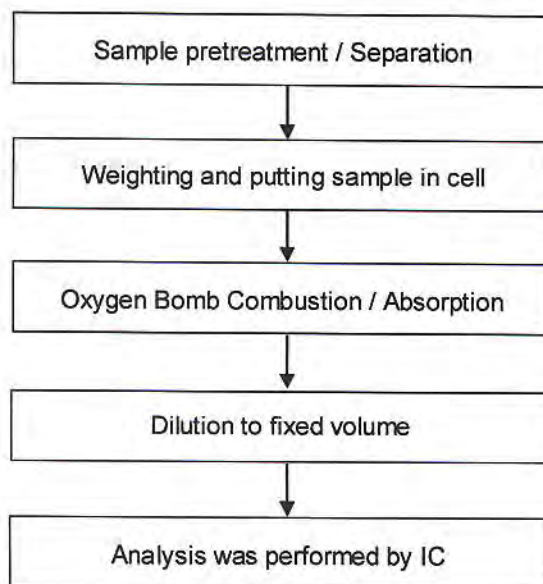
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OBERALLMENDSTRASSE 20A, CH-6300 ZUG / SWITZERLAND



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/B4959

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/B4959



** End of Report **

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SGS Taiwan Ltd.
SGS Taiwan Ltd. Chemical-Taipei 33 WuChyuan Road, Wuku Industrial Zone, New Taipei City, Taiwan / 新北市土城區五福路33號 +886 (02)2299 3279 f +886 (02)2299 3237 www.sgs.com

Test Report

No. SHAEC1216714748

Date: 25 Sep 2012

Page 1 of 5

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) : YTW108 (692535-001、692535-003)
Composition : Sn3.0CuRE
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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T&E (86-21) 61402553 F&E (86-21) 64953679
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e sgs.china@sgs.com

Test Report

No. SHAEC1216714748

Date: 25 Sep 2012

Page 2 of 5

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA12-167147.041	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	041
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	55
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. SHAEC1216714748

Date: 25 Sep 2012

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Test Item(s)	Limit	Unit	MDL	041
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 cm² sample surface area.

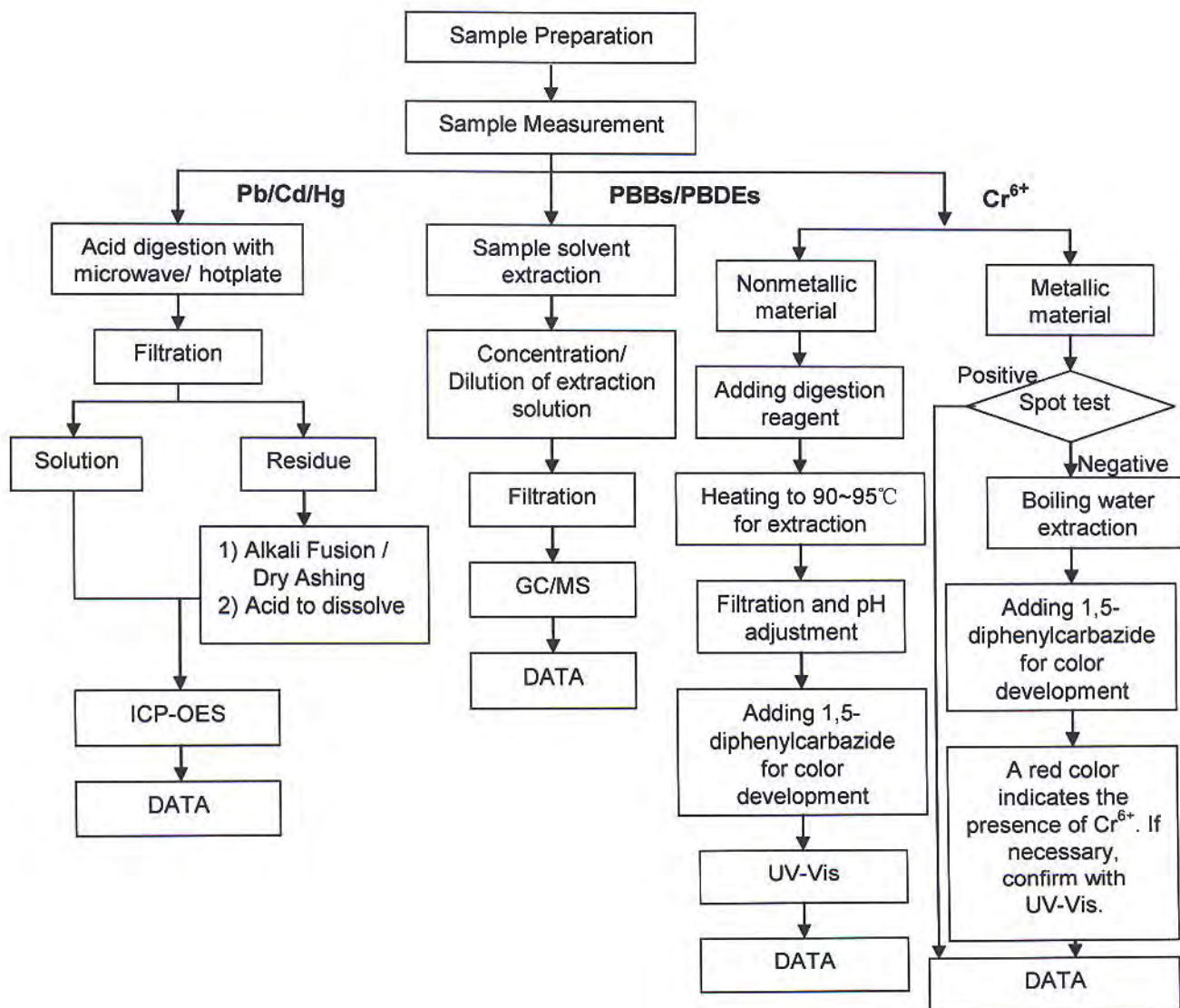
For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

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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^{6+} and PBBs/PBDEs test method excluded)



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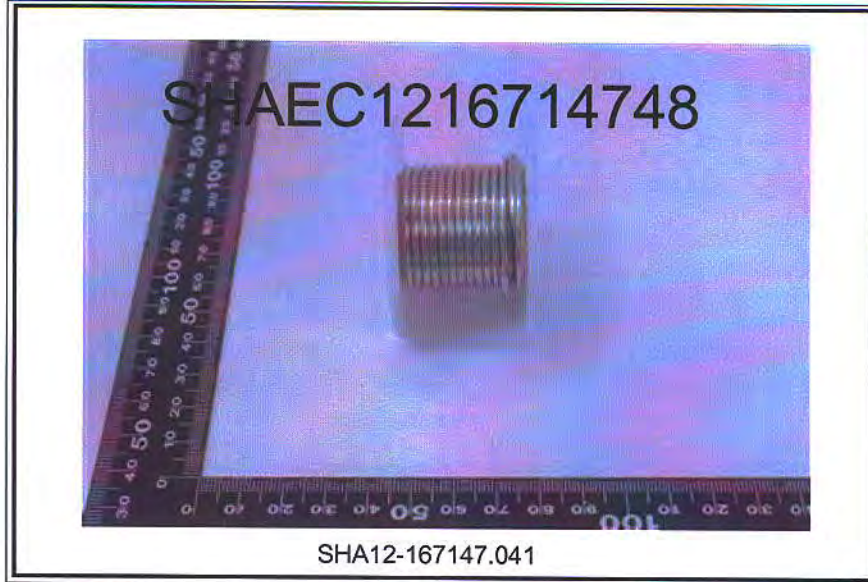
Test Report

No. SHAEC1216714748

Date: 25 Sep 2012

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Sample photo:



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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

Page 2 of 5

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

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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 cm² sample surface area.

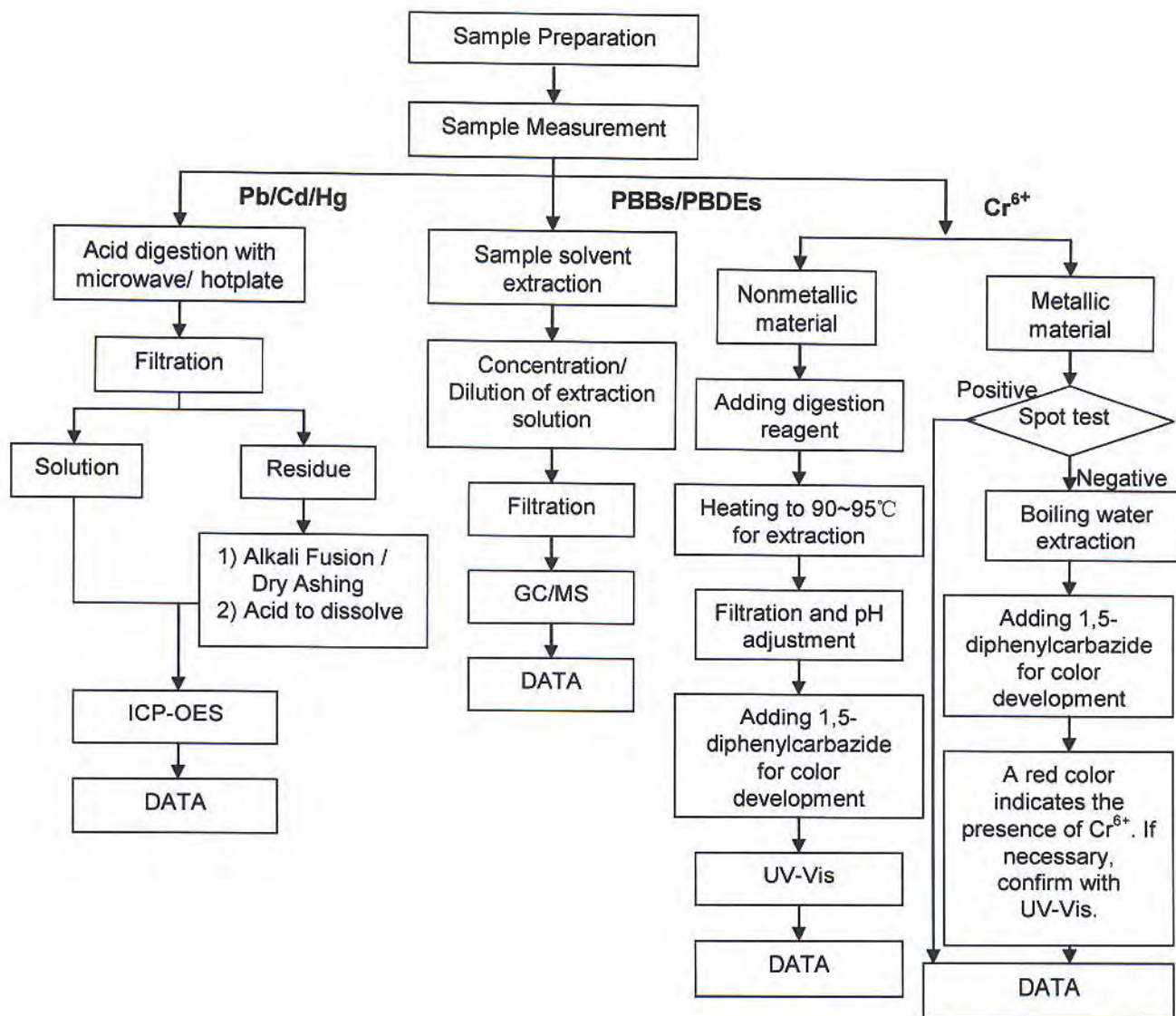
For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

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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. (Cr⁶⁺ and PBBs/PBDEs test method excluded)



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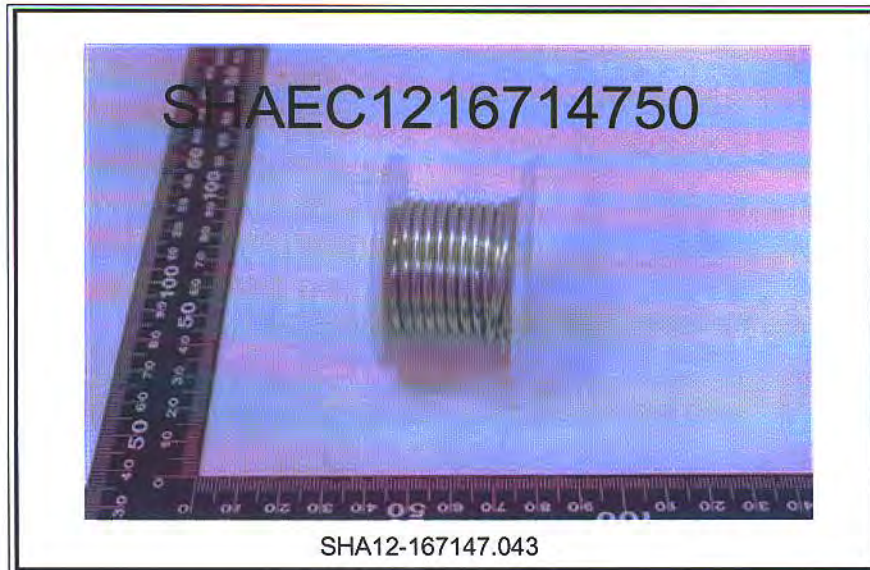
Test Report

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Date: 25 Sep 2012

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Sample photo:



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Test Report

No. CANEC1208305601

Date: 02 Jul 2012

Page 1 of 5

AIM SOLDER (SHEN ZHEN) CO.,LTD.

BLOCK 69,THIRD INDUSTRIAL ZONE,LUOTIAN VILLAGE,SONGGANG TOWN,BAOAN DISTRICT,SZ
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : SOLDER WIRE AIM230
FAST CORE H RSA605

SGS Job No. : CP12-030363 - SZ

Date of Sample Received : 26 Jun 2012

Testing Period : 26 Jun 2012 - 02 Jul 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.

Kenny Wang
Approved Signatory

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Test Report

No. CANEC1208305601

Date: 02 Jul 2012

Page 2 of 5

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	CAN12-083056.001	Silvery metal wire

Remarks :

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

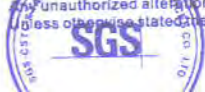
RoHS Directive 2011/65/EU

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	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	78
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

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Test Report

No. CANEC1208305601

Date: 02 Jul 2012

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Test Item(s)	Limit	Unit	MDL	001
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

(1) The maximum permissible limit is quoted from the 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

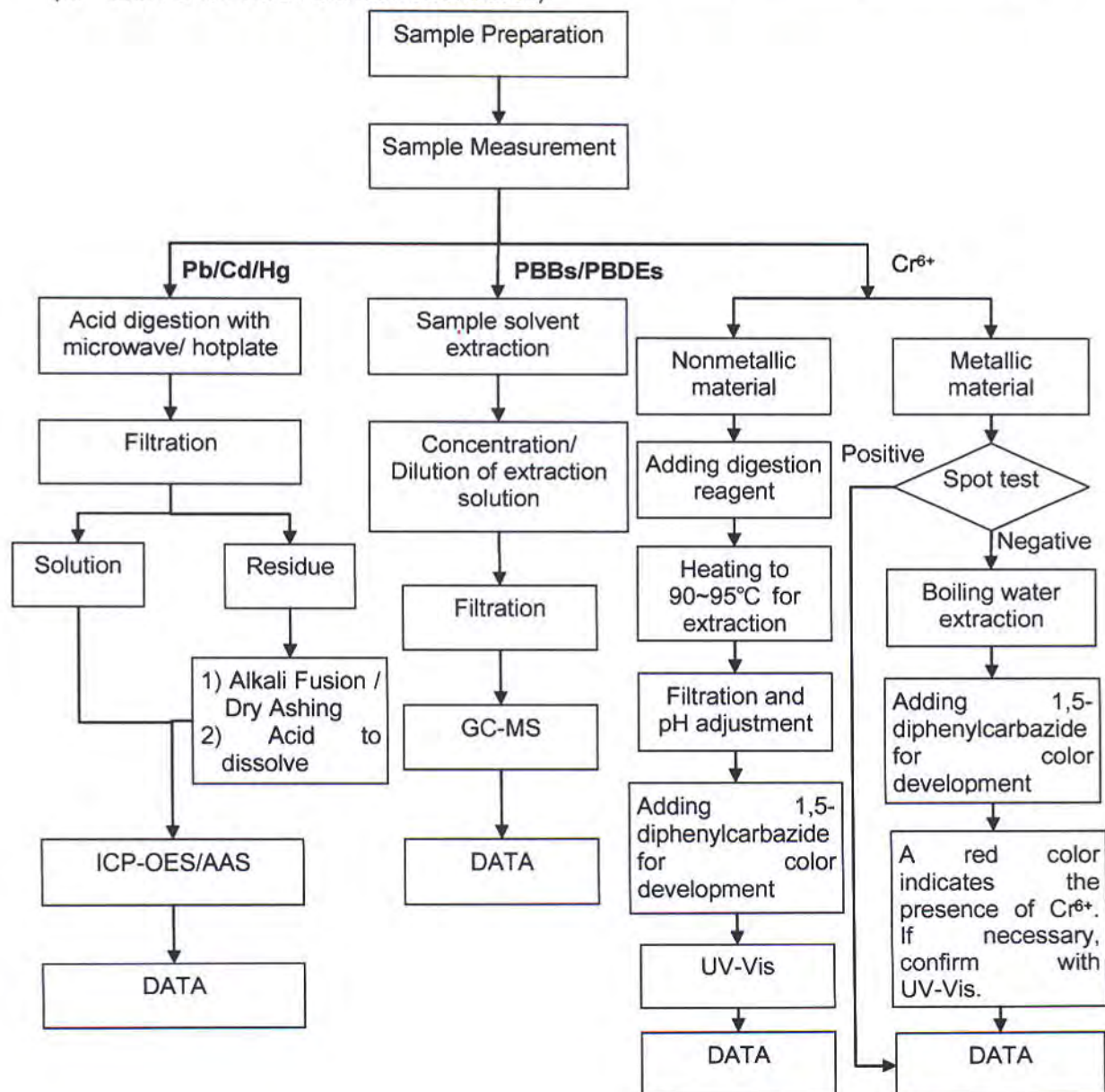
Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² sample surface area.

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

ATTACHMENTS

RoHS Testing Flow Chart

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



Test Report

No. CANEC1208305601

Date: 02 Jul 2012

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



TEST REPORT

NUMBER: SHAH00334352

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

DATE: AUG 15, 2012

SAMPLE DESCRIPTION:

One (1) submitted sample said to be **White Yarn.**

Part Description : Yarn.

Part Number : 648102.

TESTS CONDUCTED:

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

TO BE CONTINUED

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

JACOB LIN
GENERAL MANAGER

TEST REPORT

NUMBER: SHAH00334352

TESTS CONDUCTED

1 (I) Test Result Summary:

TESTING ITEM	RESULT (ppm)
HEAVY METAL	
CADMIUM (Cd) CONTENT	ND
LEAD (Pb) CONTENT	ND
MERCURY (Hg) CONTENT	ND
CHROMIUM VI (Cr ⁶⁺) CONTENT	ND
POLYBROMINATED BIPHENYLS (PBBs)	
MONOBROMINATED BIPHENYLS (MonoBB)	ND
DIBROMINATED BIPHENYLS (DiBB)	ND
TRIBROMINATED BIPHENYLS (TriBB)	ND
TETRABROMINATED BIPHENYLS (TetraBB)	ND
PENTABROMINATED BIPHENYLS (PentaBB)	ND
HEXABROMINATED BIPHENYLS (HexaBB)	ND
HEPTABROMINATED BIPHENYLS (HeptaBB)	ND
OCTABROMINATED BIPHENYLS (OctaBB)	ND
NONABROMINATED BIPHENYLS (NonaBB)	ND
DECABROMINATED BIPHENYL (DecaBB)	ND
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	
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
HALOGEN CONTENT	
FLUORINE (F)	ND
CHLORINE (Cl)	ND
BROMINE (Br)	ND
IODINE (I)	ND

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

RESPONSIBILITY OF CHEMIST: DENT FANG / KEN HE

TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00334352

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 ⁶⁺) CONTENT	0.1% (1000ppm)
POLYBROMINATED BIPHENYLS (PBBs)	0.1% (1000ppm)
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	0.1% (1000ppm)

THE ABOVE LIMITS WERE QUOTED FROM ROHS DIRECTIVE 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 ⁶⁺) 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 ANALYZE IN SAMPLE

Date Sample Receive: AUG.9, 2012

Test Period: AUG.9, 2012 To AUG.15, 2012

RESPONSIBILITY OF CHEMIST: KEN HE

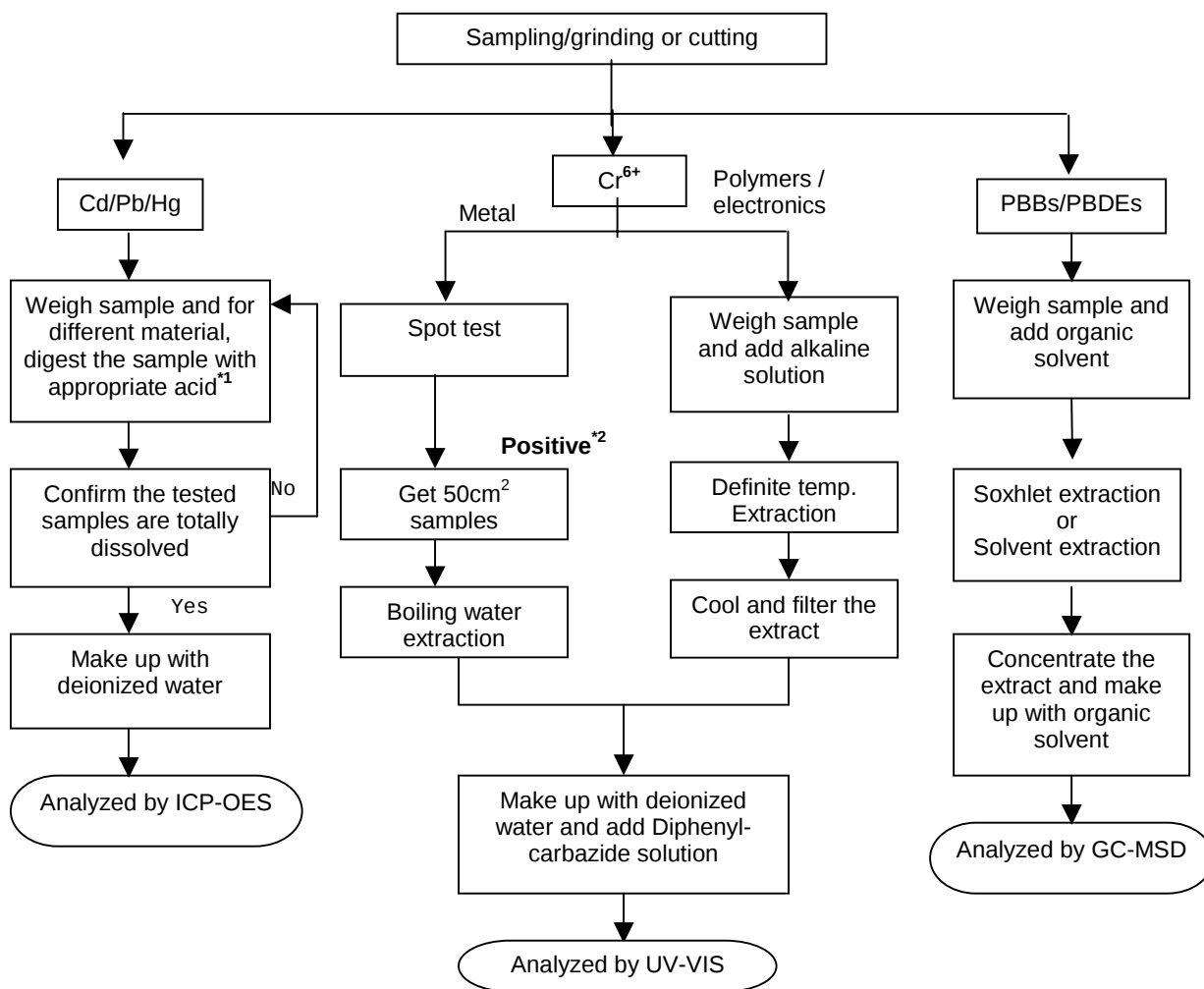
TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00334352

TESTS CONDUCTED

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



 TO BE CONTINUED



TEST REPORT

NUMBER: SHAH00334352

TESTS CONDUCTED

REMARKS:

*1: LIST OF APPROPRIATE ACID:

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

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

TO BE CONTINUED



TEST REPORT

NUMBER: SHAH00334352

TESTS CONDUCTED

2 (I) Test Result Summary :

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

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

(III) Test Method:

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

Remark: Reporting limit = Quantitation limit of analyte in sample

TO BE CONTINUED

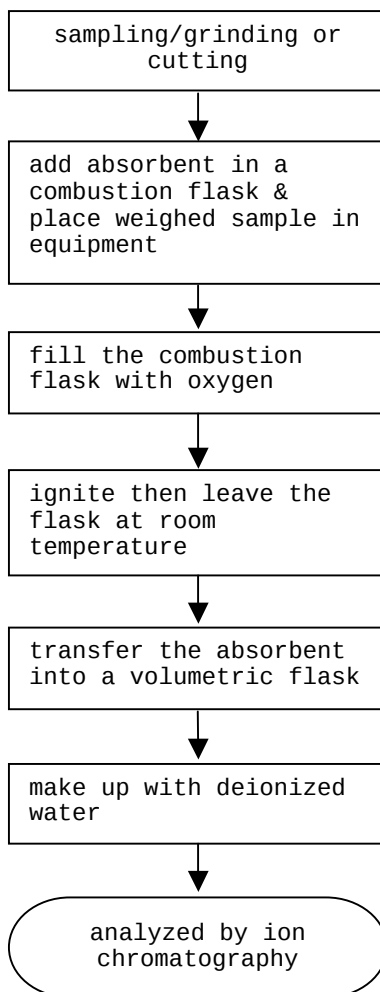
TEST REPORT

NUMBER: SHAH00334352

TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Halogen Content
Reference Standard: EN 14582



TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00334352

TESTS CONDUCTED



END OF REPORT

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測試報告
Test Report

號碼(No.) : CE/2012/41404

日期(Date) : 2012/04/13

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TY-OHM ELECTRONIC WORKS CO., LTD.

桃園縣龜山鄉頂湖一街49號

NO. 49, DINGFU 1st STREET, GUEISHAN TOWNSHIP, TAOYUAN COUNTY 333, TAIWAN



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) : CARBON FILM RESISTORS

樣品型號(Style/Item No.) : RD SERIES

收件日期(Sample Receiving Date) : 2012/04/07

測試期間(Testing Period) : 2012/04/07 TO 2012/04/13

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


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 : 整體混測 (MIXED ALL PARTS)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No.1
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.
鉛 / Lead (Pb)	mg/kg		2	n.d.
汞 / Mercury (Hg)	mg/kg		2	n.d.
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.
多溴聯苯總和 / Sum of PBBs	mg/kg	參考 IEC 62321: 2008 方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
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.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				No.1
多溴聯苯醚總和 / Sum of PBDEs	mg/kg	參考 IEC 62321: 2008 方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
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)
5. 樣品的測試是基於申請人要求混合測試, 報告中的混合測試結果不代表其中個別單一材質的含量. (The samples was/were analyzed on behalf of the applicant as mixing sample in one testing. The above results was/were only given as the informality value.)

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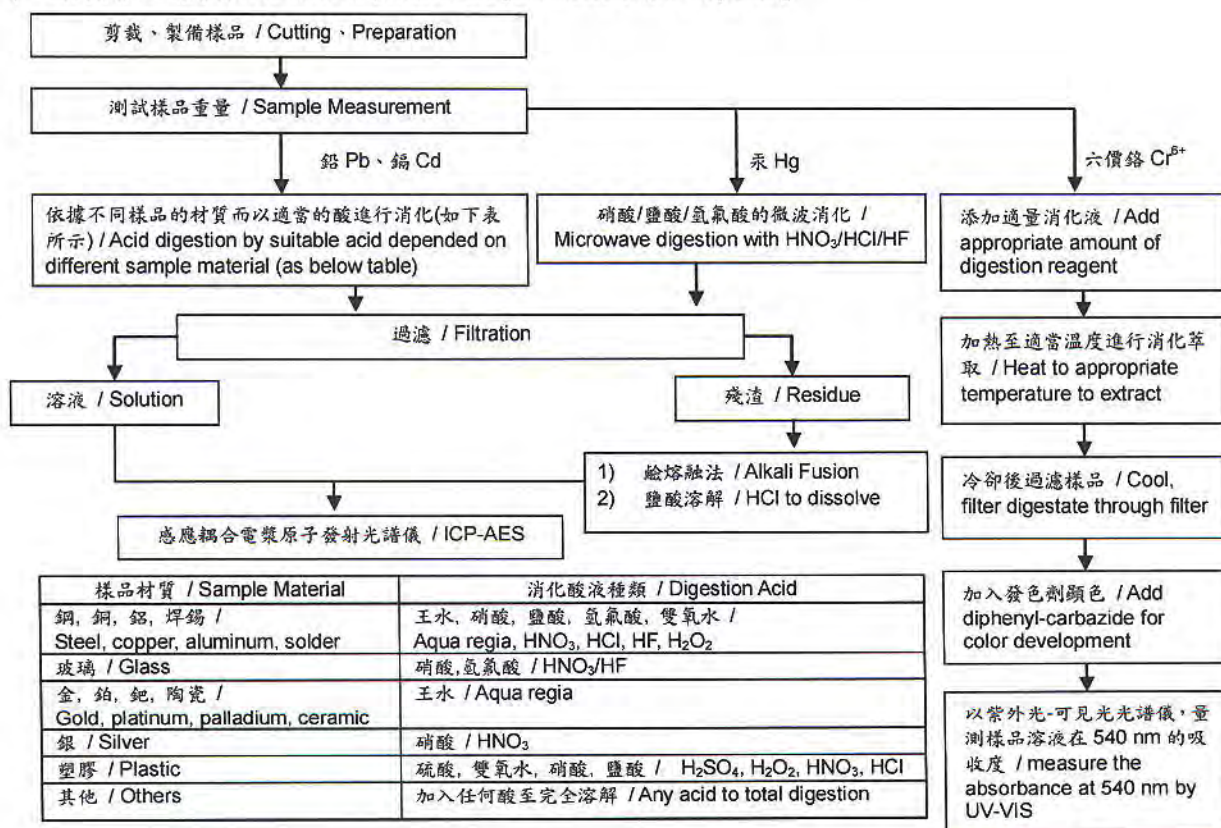
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NO. 49, DINGFU 1st STREET, GUEISHAN TOWNSHIP, TAOYUAN COUNTY 333, TAIWAN



- 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. (Cr⁶⁺ 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：張修興 / Name of the person in charge of measurement: Troy Chang



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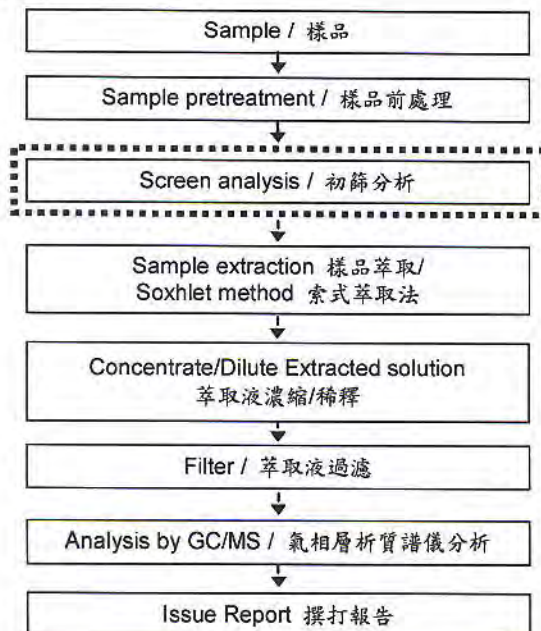
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多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 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
- 初次測試程序 / First testing process —————→
- 選擇性篩檢程序 / Optional screen process→
- 確認程序 / Confirmation process - - - ->



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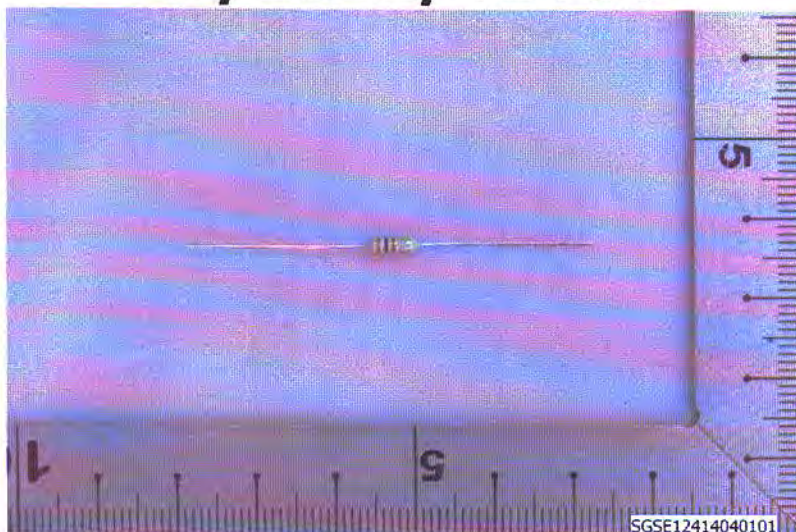
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NO. 49, DINGFU 1st STREET, GUEISHAN TOWNSHIP, TAOYUAN COUNTY 333, TAIWAN



* 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/2012/41404



** 報告結尾 (End of Report) **

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測試報告 Test Report

號碼(No.) : CE/2012/41405 日期(Date) : 2012/04/13 頁數(Page) : 1 of 4

幸亞電子工業股份有限公司

TY-OHM ELECTRONIC WORKS CO., LTD.

桃園縣龜山鄉頂湖一街49號

NO. 49, DINGFU 1st STREET, GUEISHAN TOWNSHIP, TAoyuan COUNTY 333, TAIWAN



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) : CARBON FILM RESISTORS
樣品型號(Style/Item No.) : RD SERIES
收件日期(Sample Receiving Date) : 2012/04/07
測試期間(Testing Period) : 2012/04/07 TO 2012/04/13

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


Troy Chang, Asst. Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory – Taipei

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測試報告

Test Report

號碼(No.) : CE/2012/41405 日期(Date) : 2012/04/13 頁數(Page) : 2 of 4

幸亞電子工業股份有限公司

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NO. 49, DINGFU 1st STREET, GUEISHAN TOWNSHIP, TAOYUAN COUNTY 333, TAIWAN



測試結果(Test Results)

測試部位(PART NAME) No.1 : 整體混測 (MIXED ALL PARTS)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No.1
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。 / 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)			50	n.d.
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)			50	n.d.
鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 14362-44-8)			50	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. 樣品的測試是基於申請人要求混合測試, 報告中的混合測試結果不代表其中個別單一材質的含量。(The samples was/were analyzed on behalf of the applicant as mixing sample in one testing. The above results was/were only given as the informality value.)

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測試報告 Test Report

號碼(No.) : CE/2012/41405 日期(Date) : 2012/04/13 頁數(Page) : 3 of 4

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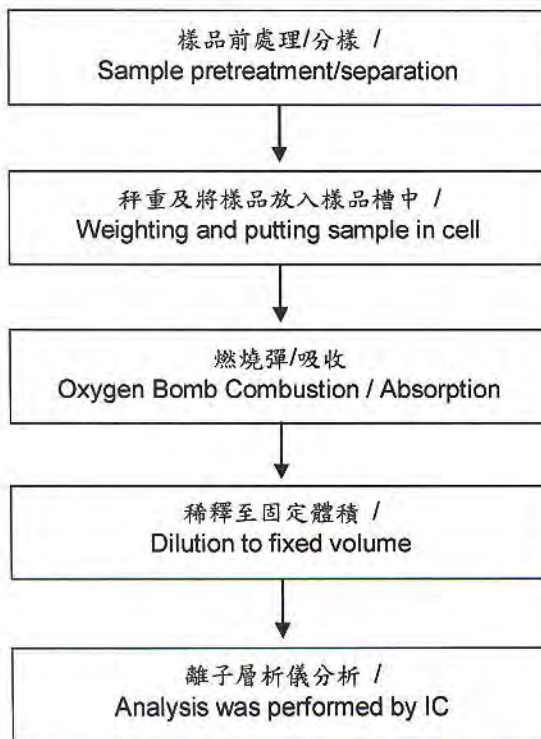
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鹵素分析流程圖 / Analytical flow chart of halogen content

- 測試人員：陳恩臻 / Name of the person who made measurement: Rita Chen
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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測試報告 Test Report

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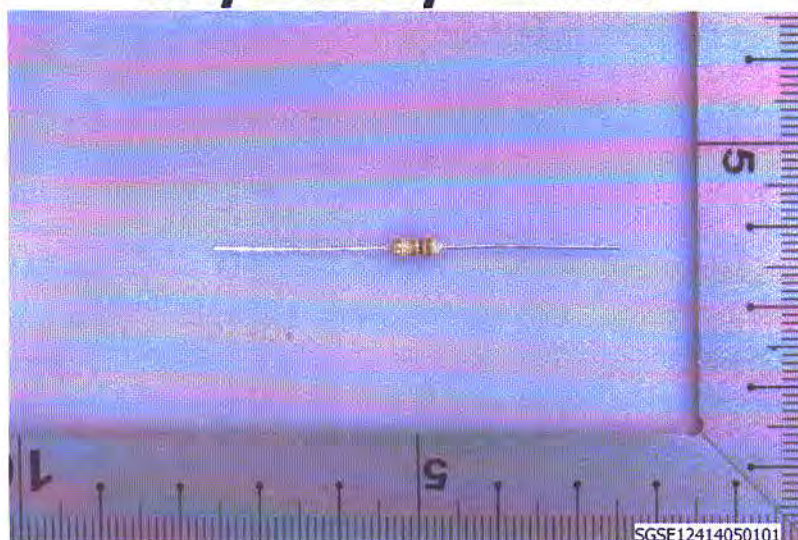
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* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。*

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

CE/2012/41405



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Test Report

No. SHAEC1119525001

Date: 07 Dec 2011

Page 1 of 5

3M CHINA LIMITED

222# TIAN LIN ROAD, SHANGHAI (200233)

The following sample(s) was/were submitted and identified on behalf of the clients as : 3M 3779-PG

SGS Job No. : SP11-036760 - SH
Date of Sample Received : 03 Dec 2011
Testing Period : 03 Dec 2011 - 07 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).

Signed for and on behalf of
SGS-CSTC Ltd.

Fan Jingjie, JJ
Approved Signatory

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Test Report

No. SHAEC1119525001

Date: 07 Dec 2011

Page 2 of 5

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA11-195250.001	Yellow solid

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)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

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Test Report

No. SHAEC1119525001

Date: 07 Dec 2011

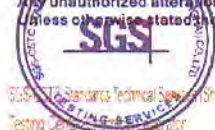
Page 3 of 5

<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

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Testing Center

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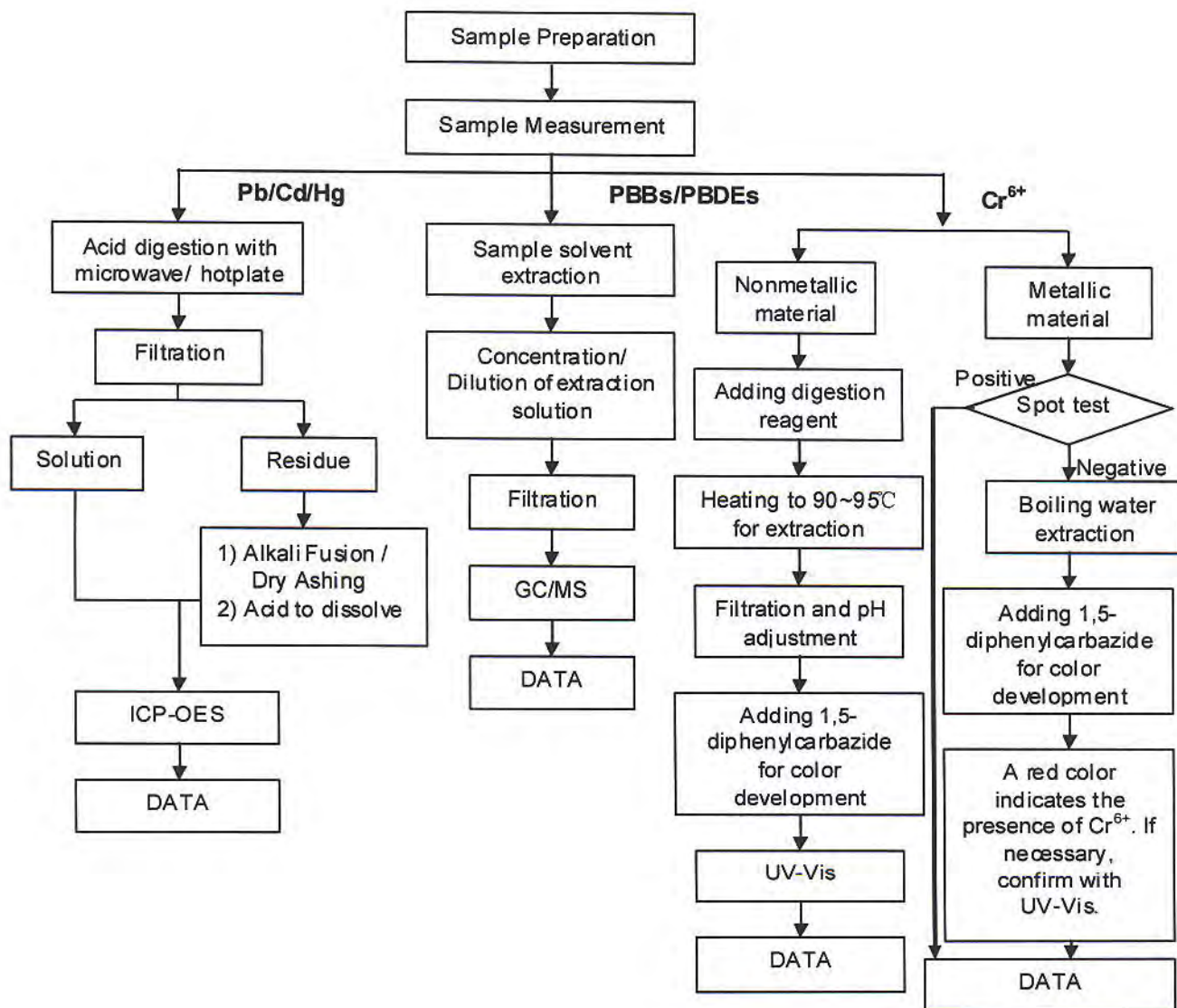
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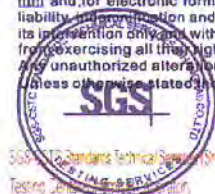
ATTACHMENTS

RoHS Testing Flow Chart

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



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Test Report

No. SHAEC1119525001

Date: 07 Dec 2011

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Sample photo:



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Test Report

No. SHAEC1119525002

Date: 07 Dec 2011

Page 1 of 4

3M CHINA LIMITED

222# TIAN LIN ROAD, SHANGHAI (200233)

The following sample(s) was/were submitted and identified on behalf of the clients as : 3M 3779-PG

SGS Job No. : SP11-036760 - SH
Date of Sample Received : 03 Dec 2011
Testing Period : 03 Dec 2011 - 07 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).

Signed for and on behalf of
SGS-CSTC Ltd.

Fan Jingjie, JJ
Approved Signatory

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Test Report

No. SHAEC1119525002

Date: 07 Dec 2011

Page 2 of 4

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA11-195250.001	Yellow solid

Remarks :

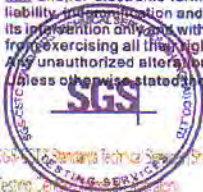
- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

Halogen

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

Test Item(s)	Unit	MDL	001
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

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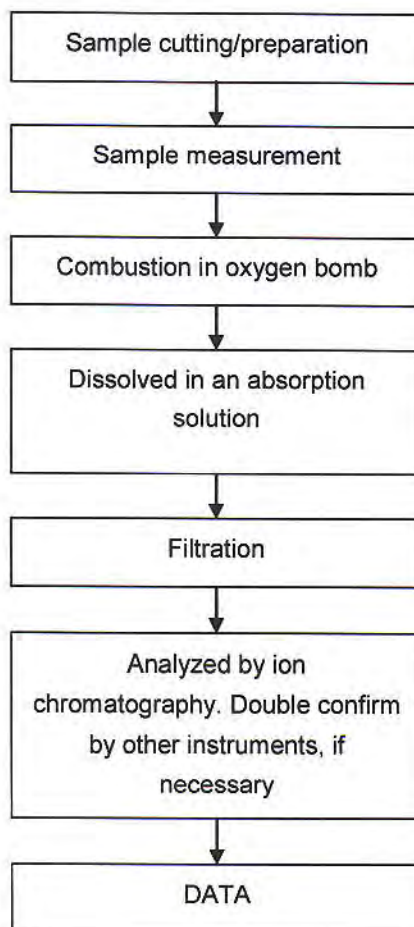
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e sgs.china@sgs.com

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ATTACHMENTS

Halogen Testing Flow Chart

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



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Test Report

No. SHAEC1119525002

Date: 07 Dec 2011

Page 4 of 4

Sample photo:



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TEST REPORT

NUMBER: SHAH00345629

APPLICANT: LITTELFUSE,INC.
800 E. NORTHWEST HWY
ATTN: A.DIVIETRO/D.UNTIEDT

DATE: OCT 29, 2012

SAMPLE DESCRIPTION:

ONE (1) SUBMITTED SAMPLE SAID TO BE **ORANGE INK.**
PART DESCRIPTION : INK-ORANGE.
PART NUMBER : 425900.
DATE SAMPLE RECEIVED : OCTOBER.15, 2012.
DATE TEST STARTED : OCTOBER.15, 2012.

TESTS CONDUCTED:

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

TO BE CONTINUED

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

JACOB LIN
GENERAL MANAGER

TESTS CONDUCTED

1 (I) Test Result Summary :

Testing Item	Result (ppm)
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content	ND
Polybrominated Biphenyls (PBBs)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)	
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

(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 ⁶⁺) 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

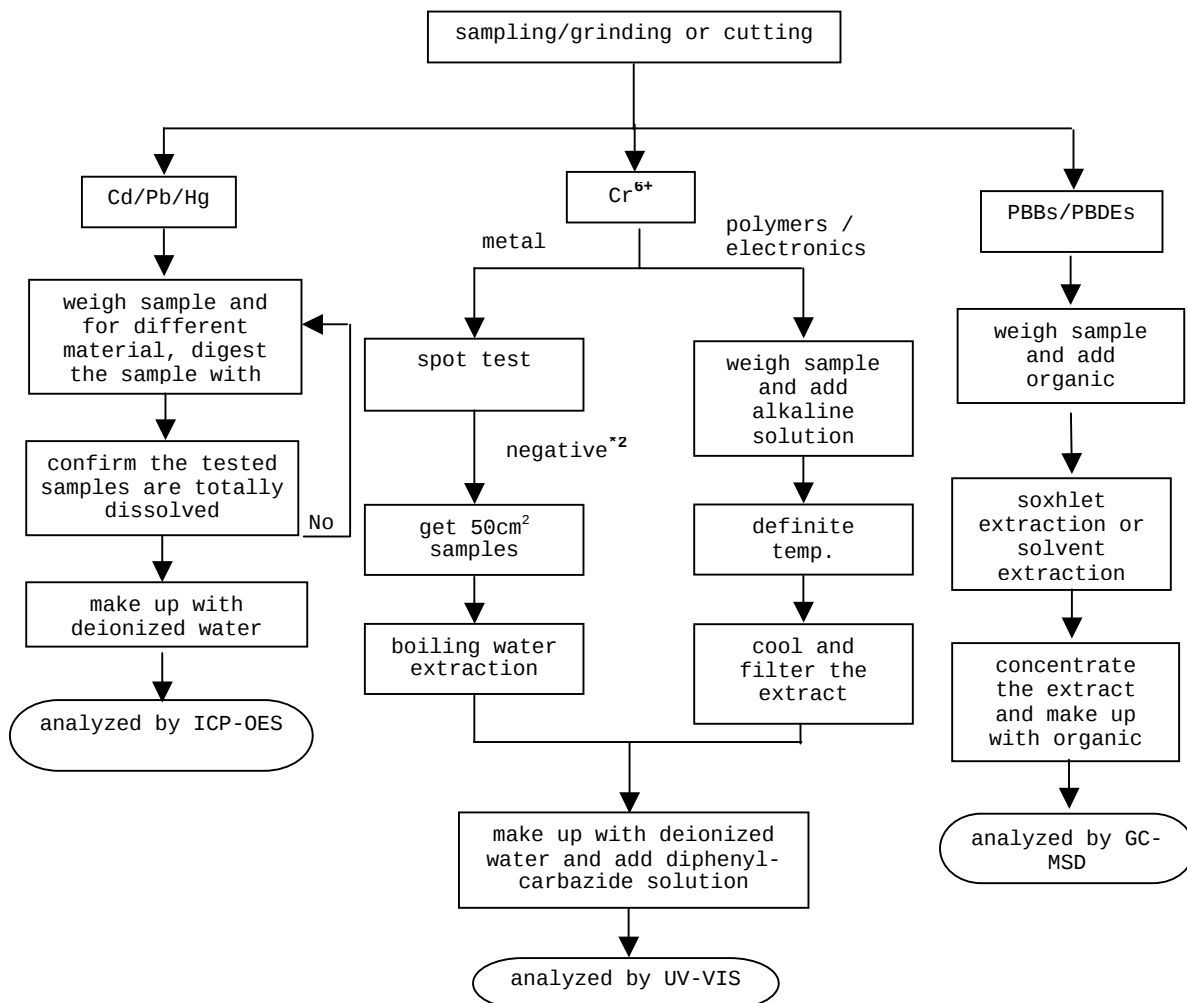
TO BE CONTINUED

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 ₃ ,HCl,HF,H ₂ O ₂ ,H ₃ BO ₃
Metals	HNO ₃ ,HCl,HF
Electronics	HNO ₃ ,HCl,H ₂ O ₂ ,HBF ₄

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

TO BE CONTINUED



TEST REPORT

NUMBER: SHAH00345629

TESTS CONDUCTED

2 (I) Test Result Summary :

Testing Item	Result (ppm)
Halogen Content	
Fluorine (F)	ND
Chlorine (Cl)	14500
Bromine (Br)	ND
Iodine (I)	ND

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

Responsibility Of Chemist : LEAF LIU

(III) Test Method:

Testing Item	Testing Method	Reporting Limit
Halogen Content	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

Remark: Reporting limit = Quantitation limit of analyte in sample

TO BE CONTINUED

Intertek Testing Services Ltd., Shanghai

Block B, Jinling Business Square, No.801 YiShan Road, Shanghai, China. 200233

上海天祥質量技術服務有限公司

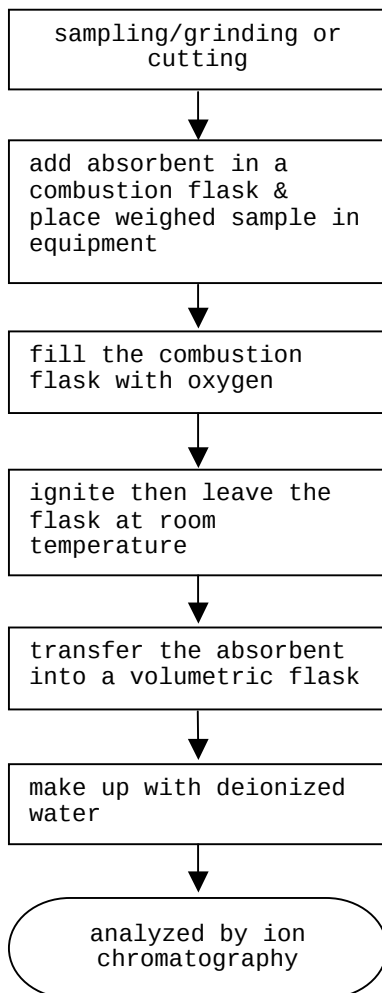
上海市宜山路 801 號金陵商務廣場 B 座 200233

Telephone: +86 21 6120 6060 Facsimile: +86 21 6127 9740

www.intertek.com www.intertek.com.cn

TESTS CONDUCTED
(IV) Measurement Flowchart:

Test For Halogen Content
Reference Standard: EN 14582



TO BE CONTINUED



TEST REPORT

NUMBER: SHAH00345629

3

TESTS CONDUCTED

(A) TEST RESULT SUMMARY:

TESTING ITEM	RESULT(ppm)
HBCD (HEXABROMOCYCLODODECANE)	ND

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

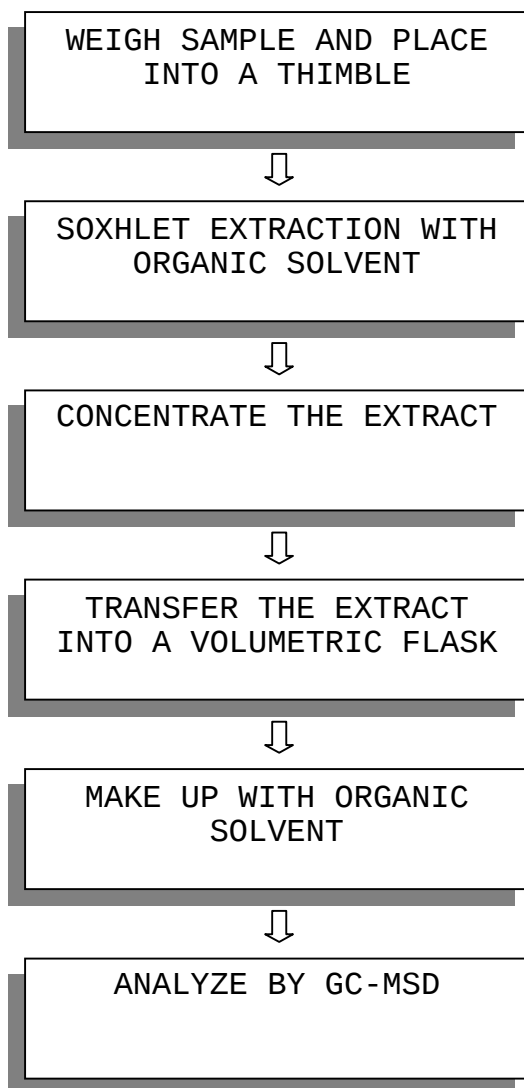
(B) TEST METHOD :

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

TO BE CONTINUED

TESTS CONDUCTED
MEASUREMENT FLOWCHART

TEST FOR HBCD (HEXABROMOCYCLODODECANE) CONTENT



TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00345629

TESTS CONDUCTED

4 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> <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
FOR PHTHALATE CONTENT IN TOYS AND CHILDREN CARE ARTICLES.

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

5 PHthalate Content Test

WITH REFERENCE TO CPSC-CH-C1001-09.3, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

<u>TESTED COMPOUND</u>	<u>RESULT (%W/W)</u>	<u>LIMIT(%W/W)</u> <u>(MAX.)</u>
DI-BUTYL 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 & AMENDMENT H.R.2715 FOR PROHIBITION ON
SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

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

DATE SAMPLE RECEIVED: OCT.15, 2012

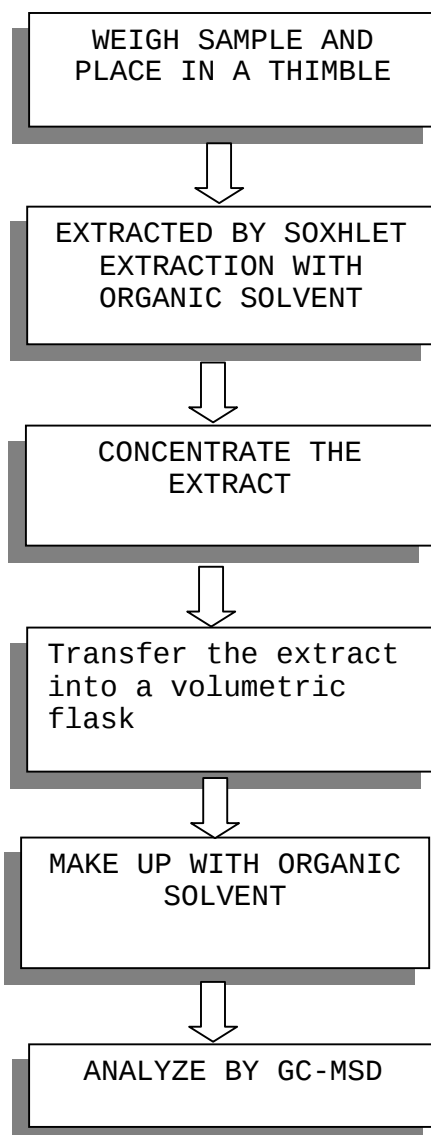
TESTING PERIOD: OCT.15, 2012 TO OCT.18, 2012

TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (EN14372)

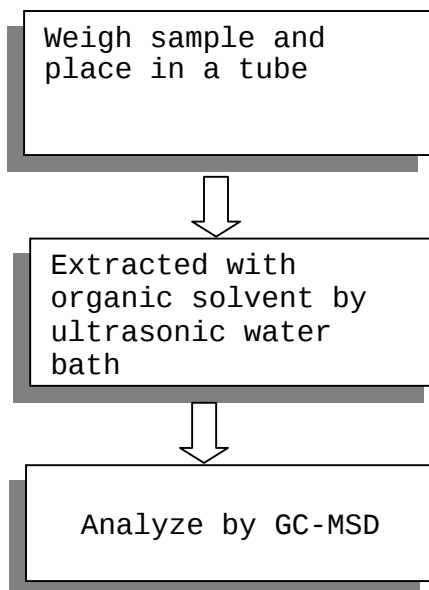


TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (CPSC-CH-C1001-09.3)



TO BE CONTINUED

TESTS CONDUCTED



END OF REPORT

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TEST REPORT

NUMBER: SHAH00345635

APPLICANT: LITTELFUSE, INC.
800 E. NORTHWEST HWY
ATTN: A.DIVIETRO/D.UNTIEDT

DATE: OCT 29, 2012

SAMPLE DESCRIPTION:

ONE (1) SUBMITTED SAMPLE SAID TO BE **BLACK INK.**
PART DESCRIPTION : INK-BLACK.
PART NUMBER : 425902.
DATE SAMPLE RECEIVED : OCTOBER.15, 2012.
DATE TEST STARTED : OCTOBER.15, 2012.

TESTS CONDUCTED:

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

TO BE CONTINUED

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

JACOB LIN
GENERAL MANAGER

TESTS CONDUCTED

1 (I) Test Result Summary :

Testing Item	Result (ppm)
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content	ND
Polybrominated Biphenyls (PBBs)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)	
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

(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 ⁶⁺) 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

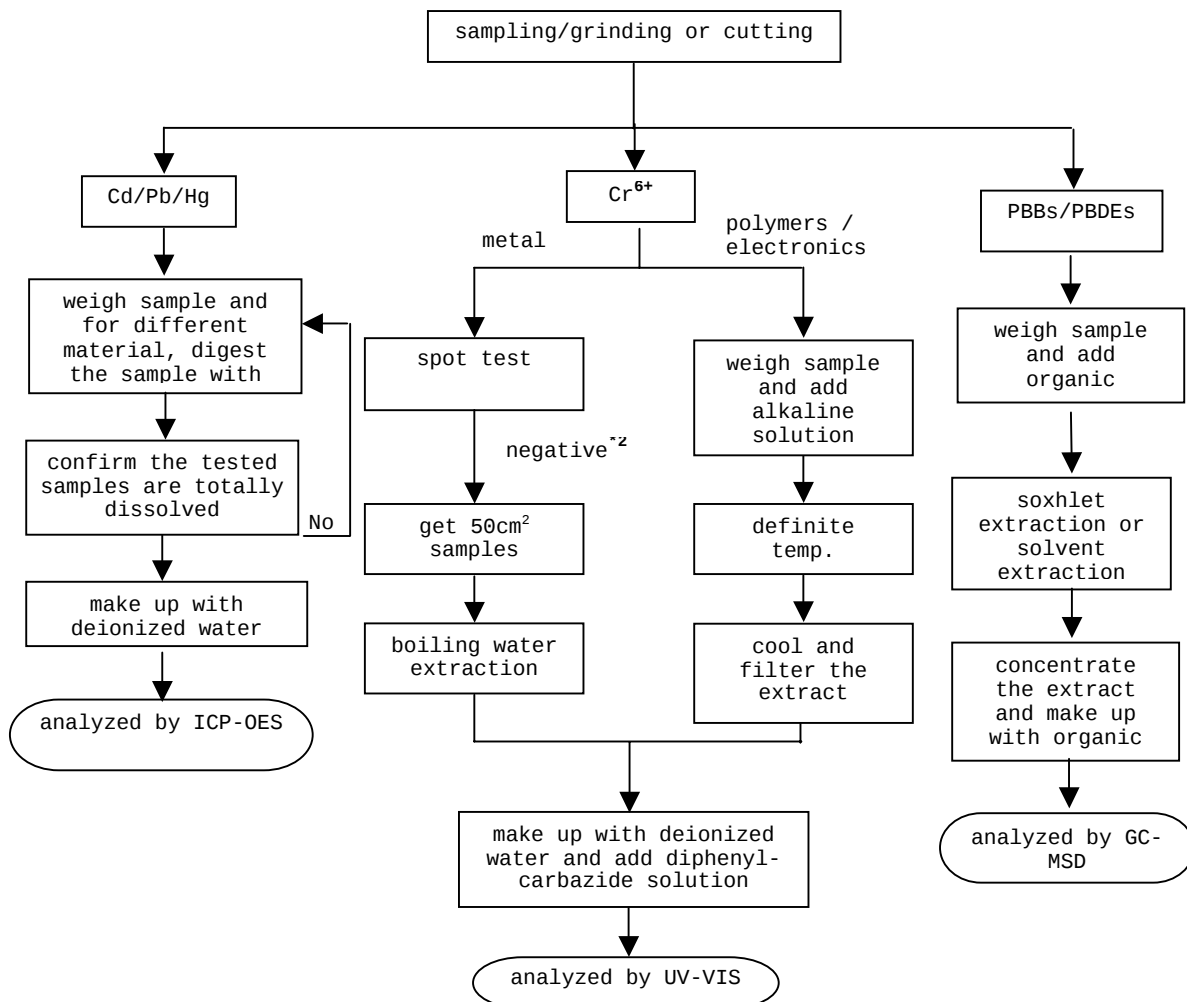
TO BE CONTINUED

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 ₃ ,HCl,HF,H ₂ O ₂ ,H ₃ BO ₃
Metals	HNO ₃ ,HCl,HF
Electronics	HNO ₃ ,HCl,H ₂ O ₂ ,HBF ₄

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

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00345635

TESTS CONDUCTED

2 (I) Test Result Summary :

Testing Item	Result (ppm)
Halogen Content	
Fluorine (F)	ND
Chlorine (Cl)	150
Bromine (Br)	ND
Iodine (I)	ND

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

Responsibility Of Chemist : Leaf Liu

(III) Test Method:

Testing Item	Testing Method	Reporting Limit
Halogen Content	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

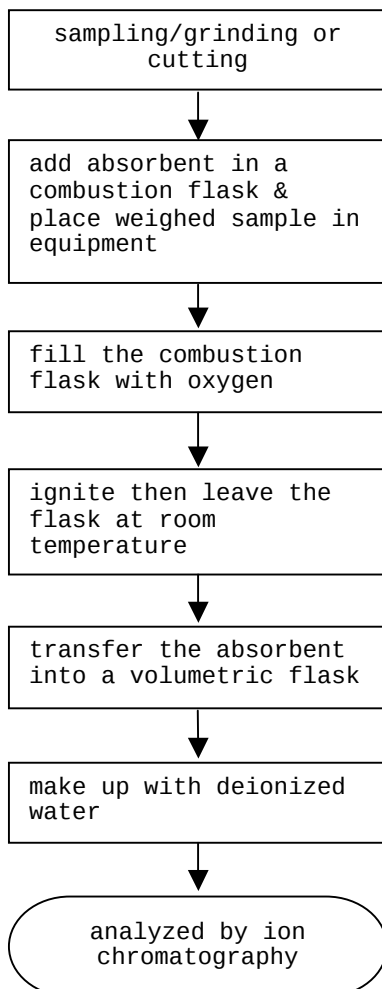
Remark: Reporting limit = Quantitation limit of analyte in sample

TO BE CONTINUED

TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Halogen Content
Reference Standard: EN 14582



TO BE CONTINUED



TEST REPORT

NUMBER: SHAH00345635

TESTS CONDUCTED

3 (A) TEST RESULT SUMMARY:

TESTING ITEM	RESULT(ppm)
HBCD (HEXABROMOCYCLODODECANE)	ND

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

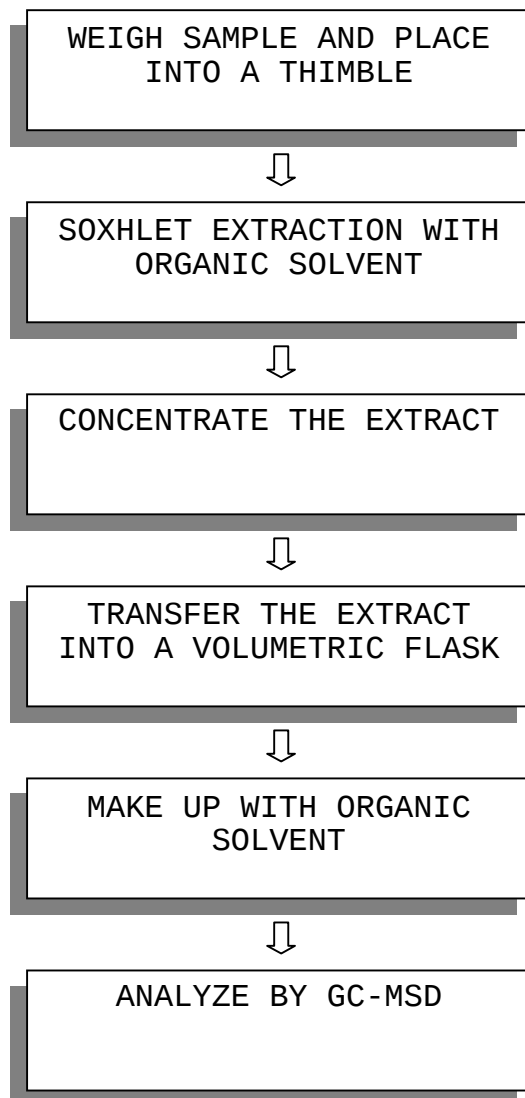
TESTING ITEM	TESTING METHOD	REPORTING LIMIT
HBCD (HEXABROMOCYCLODODECANE)	WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS	10 ppm

TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCD (HEXABROMOCYCLODODECANE) CONTENT

*****
TO BE CONTINUED

TESTS CONDUCTED

4 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> <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 FOR PHTHALATE CONTENT IN TOYS AND CHILDREN CARE ARTICLES.

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

5 PHthalate Content Test

WITH REFERENCE TO CPSC-CH-C1001-09.3, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

<u>TESTED COMPOUND</u>	<u>RESULT (%W/W)</u>	<u>LIMIT(%W/W)</u> <u>(MAX.)</u>
DI-BUTYL 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 & AMENDMENT H.R.2715 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

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

DATE SAMPLE RECEIVED: OCT.15, 2012

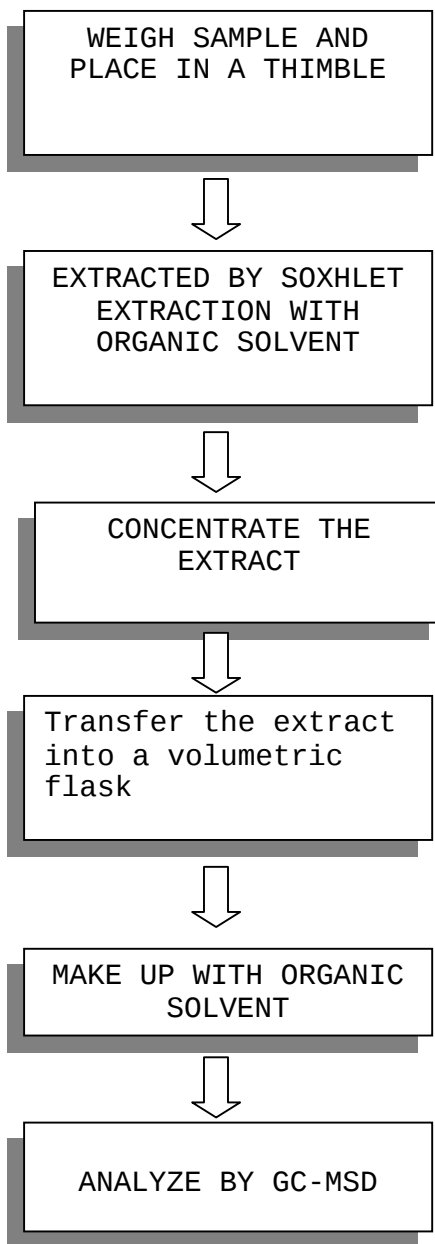
TESTING PERIOD : OCT.15, 2012 TO OCT.18, 2012

TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (EN14372)

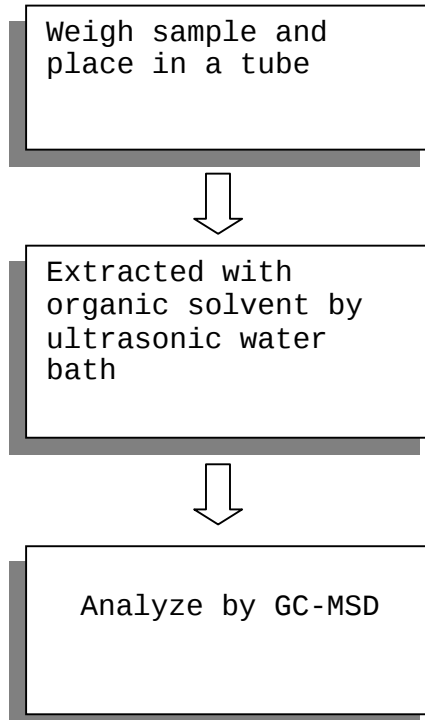


TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (CPSC-CH-C1001-09.3)



TO BE CONTINUED

TESTS CONDUCTED



SHAH00345635

END OF REPORT

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TEST REPORT

NUMBER: SHAH00345662

APPLICANT: LITTELFUSE, INC.
800 E. NORTHWEST HWY
ATTN: A.DIVIETRO/D.UNTIEDT

DATE: OCT 26, 2012

SAMPLE DESCRIPTION:

ONE (1) SUBMITTED SAMPLE SAID TO BE **YELLOW INK.**
PART DESCRIPTION : INK-YELLOW.
PART NUMBER : 425903.
DATE SAMPLE RECEIVED : OCTOBER.15, 2012.
DATE TEST STARTED : OCTOBER.15, 2012.

TESTS CONDUCTED:

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

TO BE CONTINUED

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

JACOB LIN
GENERAL MANAGER

TESTS CONDUCTED

1 (I) Test Result Summary :

Testing Item	Result (ppm)
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content	ND
Polybrominated Biphenyls (PBBs)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)	
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

(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 ⁶⁺) 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

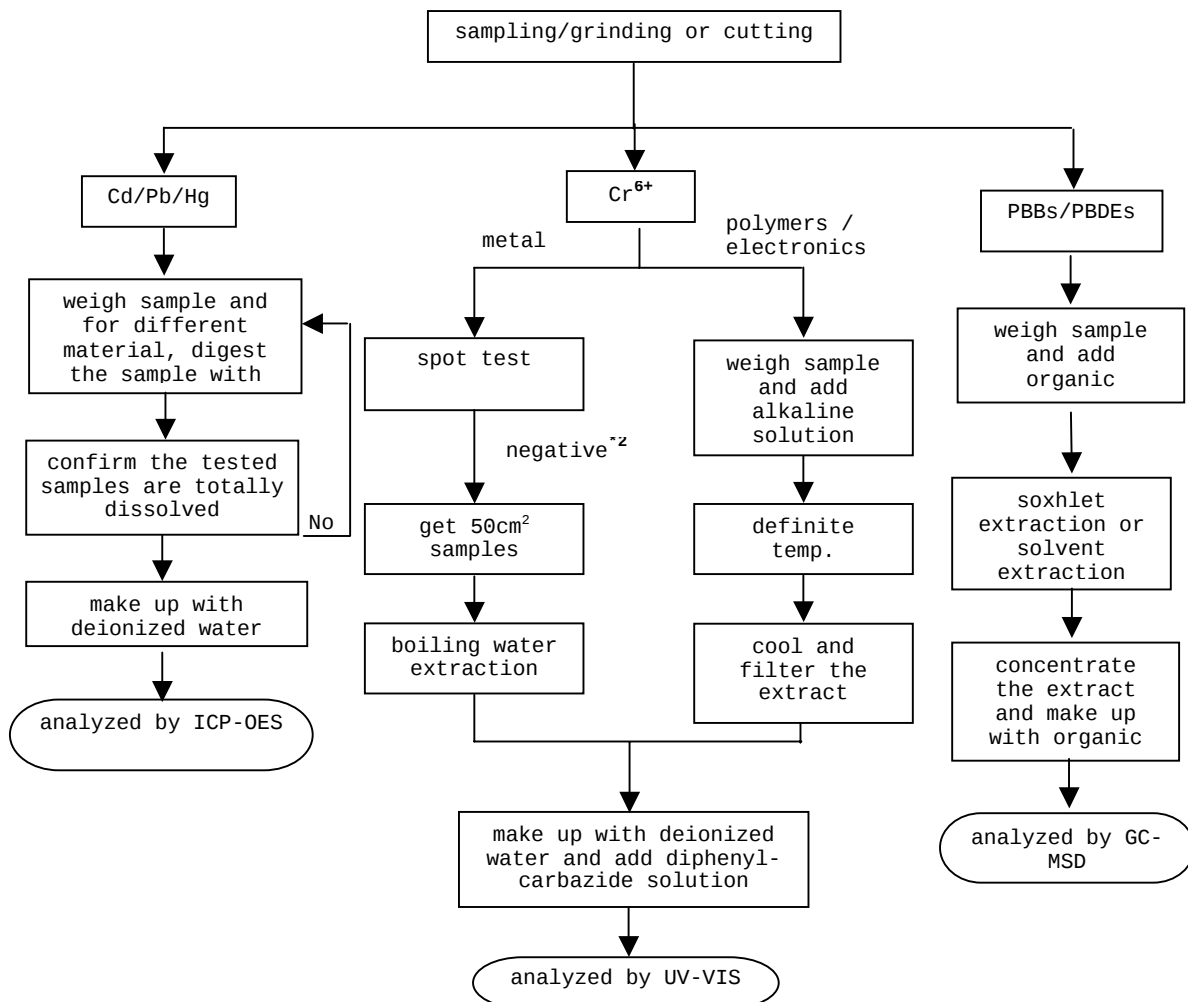
TO BE CONTINUED

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 ₃ ,HCl,HF,H ₂ O ₂ ,H ₃ BO ₃
Metals	HNO ₃ ,HCl,HF
Electronics	HNO ₃ ,HCl,H ₂ O ₂ ,HBF ₄

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

TO BE CONTINUED



TEST REPORT

NUMBER: SHAH00345662

TESTS CONDUCTED

2 (I) Test Result Summary :

Testing Item	Result (ppm)
Halogen Content	
Fluorine (F)	ND
Chlorine (Cl)	7400
Bromine (Br)	ND
Iodine (I)	ND

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

Responsibility Of Chemist : Leaf Liu

(III) Test Method:

Testing Item	Testing Method	Reporting Limit
Halogen Content	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

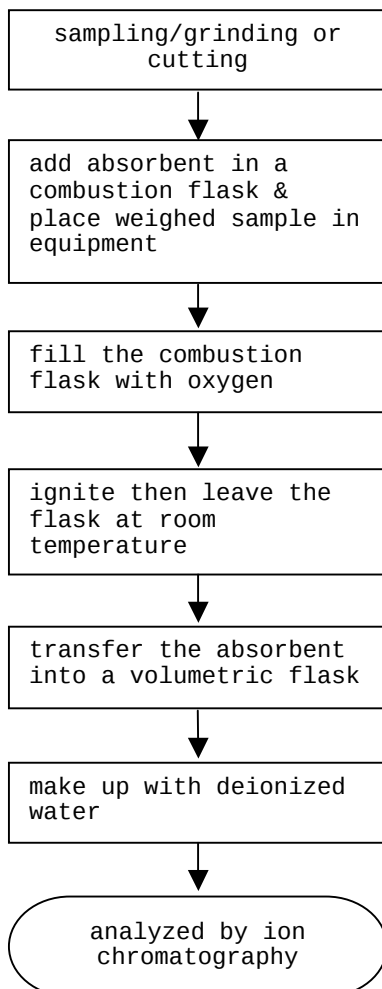
Remark: Reporting limit = Quantitation limit of analyte in sample

TO BE CONTINUED

TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Halogen Content
Reference Standard: EN 14582



TO BE CONTINUED



TEST REPORT

NUMBER: SHAH00345662

TESTS CONDUCTED

3 (A) TEST RESULT SUMMARY:

TESTING ITEM	RESULT(ppm)
HBCD (HEXABROMOCYCLODODECANE)	ND

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

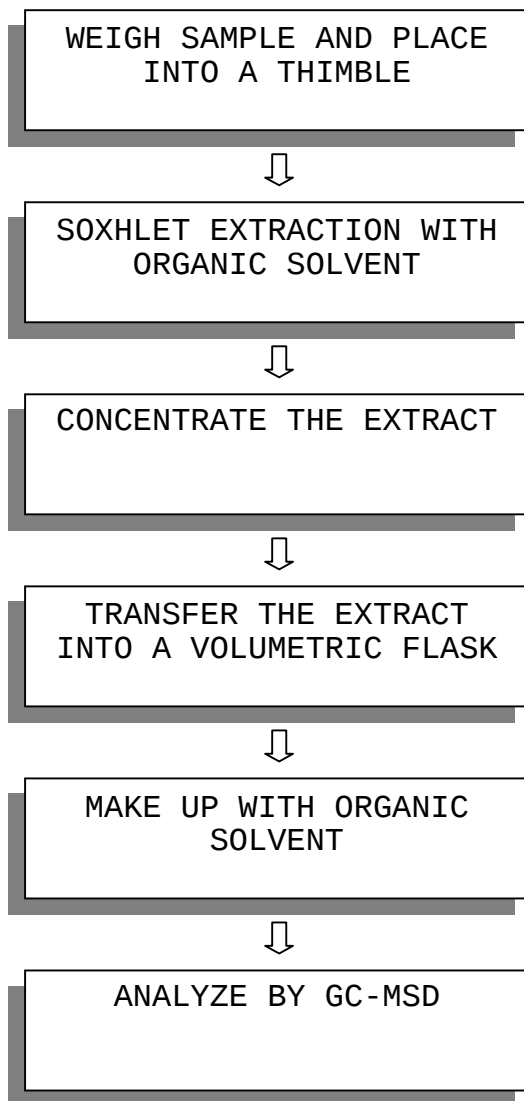
TESTING ITEM	TESTING METHOD	REPORTING LIMIT
HBCD (HEXABROMOCYCLODODECANE)	WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS	10 ppm

TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCD (HEXABROMOCYCLODODECANE) CONTENT



TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00345662

TESTS CONDUCTED

4 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> <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 FOR PHTHALATE CONTENT IN TOYS AND CHILDREN CARE ARTICLES.

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

5 PHthalate Content Test

WITH REFERENCE TO CPSC-CH-C1001-09.3, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

<u>TESTED COMPOUND</u>	<u>RESULT (%W/W)</u>	<u>LIMIT(%W/W)</u> <u>(MAX.)</u>
DI-BUTYL 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 & AMENDMENT H.R.2715 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

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

DATE SAMPLE RECEIVED: OCT.15, 2012

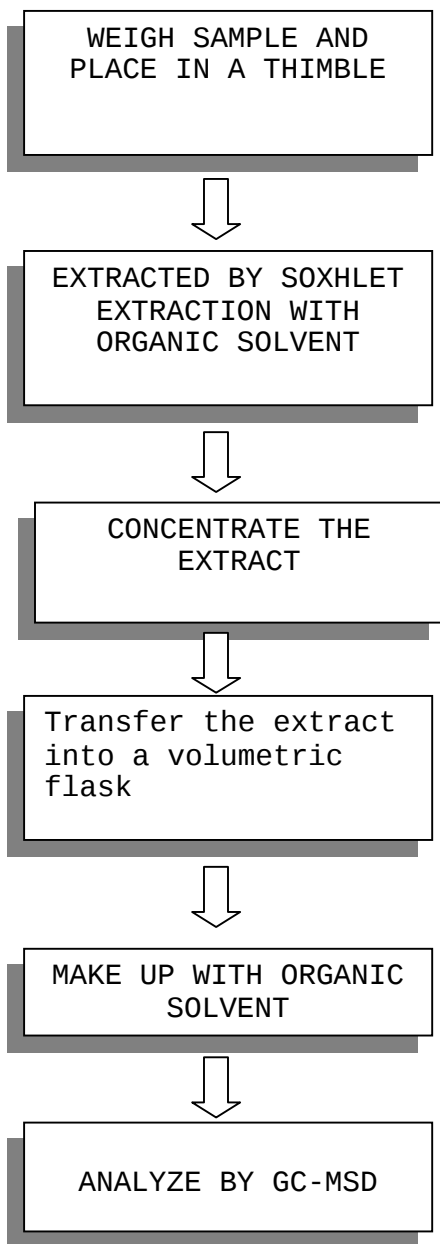
TESTING PERIOD : OCT.15, 2012 TO OCT.19, 2012

TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (EN14372)

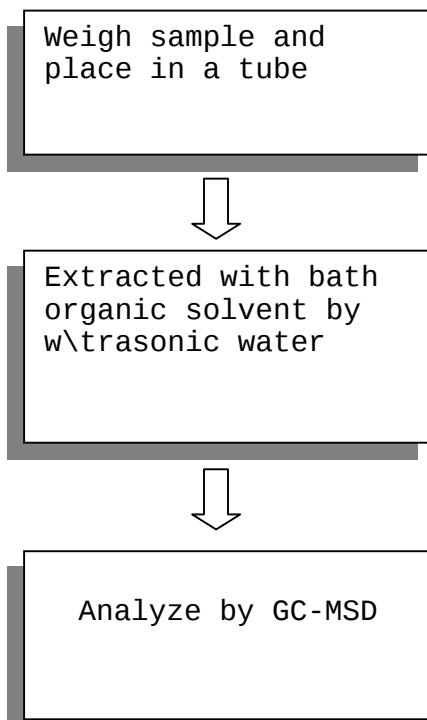


TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (CPSC-CH-C1001-09.3)



TO BE CONTINUED

TESTS CONDUCTED



END OF REPORT

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TEST REPORT

NUMBER: SHAH00345432

APPLICANT: LITTELFUSE, INC.
800 E. NORTHWEST HWY
ATTN: A.DIVIETRO/D.UNTIEDT

DATE: OCT 29, 2012

SAMPLE DESCRIPTION:

ONE (1) SUBMITTED SAMPLE SAID TO BE **BROWN INK.**
PART DESCRIPTION : INK-BROWN.
PART NUMBER : 425906.
DATE SAMPLE RECEIVED : OCTOBER.15, 2012.
DATE TEST STARTED : OCTOBER.15, 2012.

TESTS CONDUCTED:

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

TO BE CONTINUED

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

JACOB LIN
GENERAL MANAGER

TESTS CONDUCTED

1 (I) Test Result Summary :

Testing Item	Result (ppm)
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content	ND
Polybrominated Biphenyls (PBBs)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)	
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

(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 ⁶⁺) 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

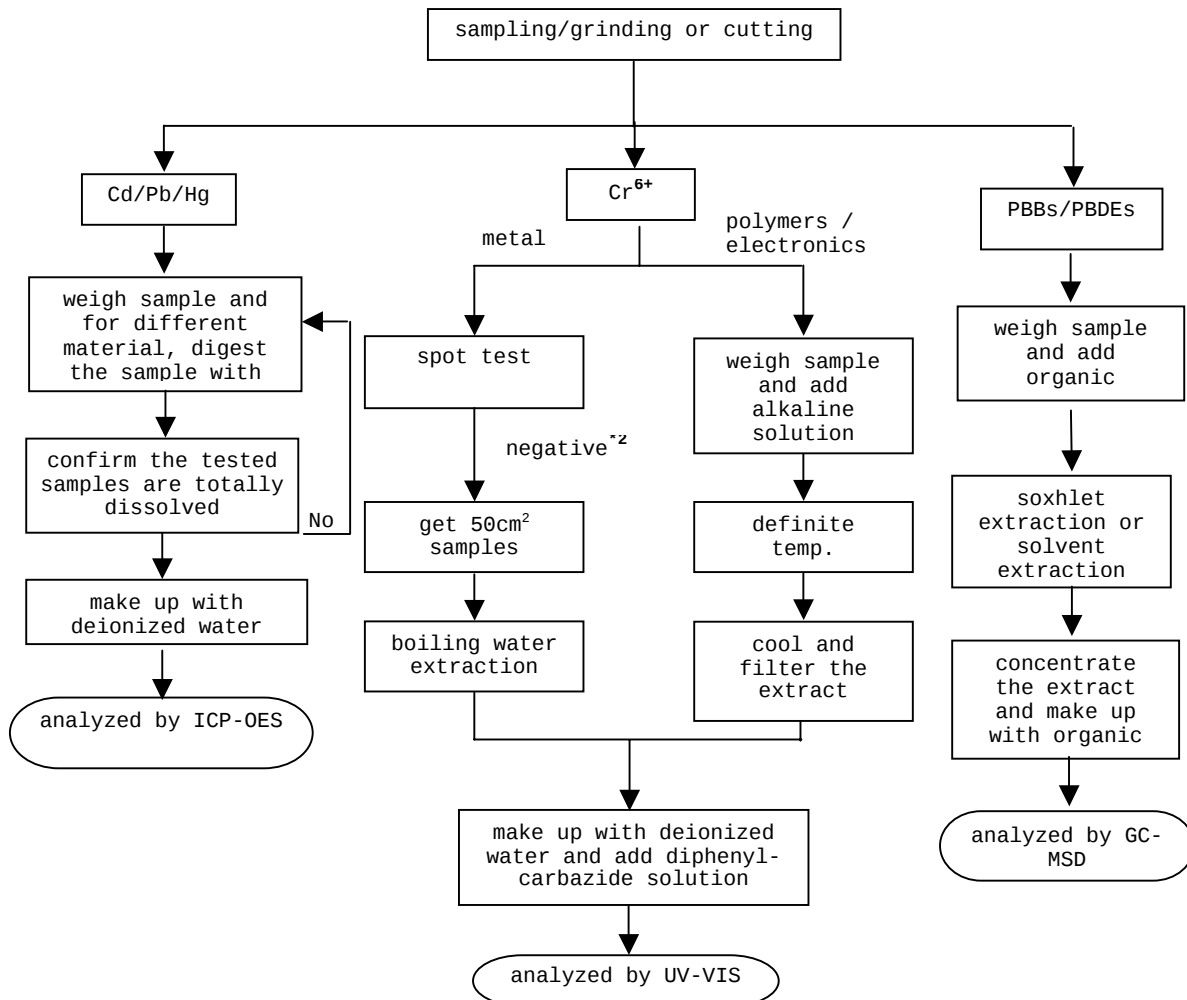
TO BE CONTINUED

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 ₃ ,HCl,HF,H ₂ O ₂ ,H ₃ BO ₃
Metals	HNO ₃ ,HCl,HF
Electronics	HNO ₃ ,HCl,H ₂ O ₂ ,HBF ₄

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

TO BE CONTINUED

**TEST REPORT**

NUMBER: SHAH00345432

TESTS CONDUCTED

2 (I) Test Result Summary :

<u>Testing Item</u>	<u>Result (ppm)</u>
Halogen Content	
Fluorine (F)	ND
Chlorine (Cl)	8600
Bromine (Br)	ND
Iodine (I)	ND

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

Responsibility Of Chemist : Leaf Liu

(III) Test Method:

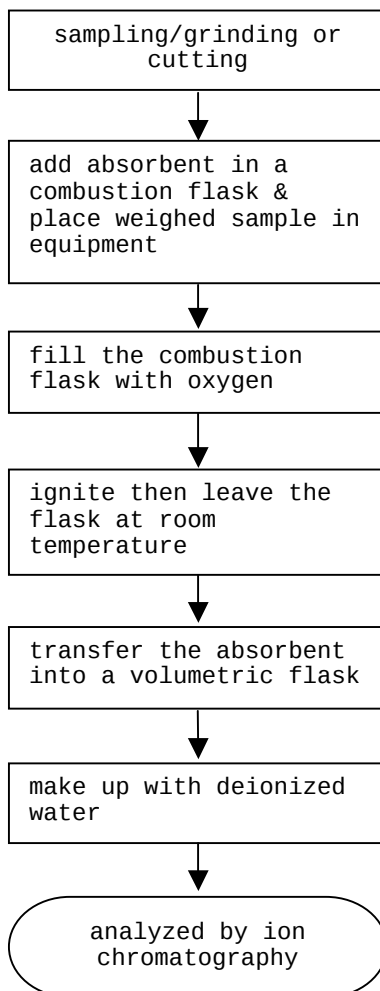
<u>Testing Item</u>	<u>Testing Method</u>	<u>Reporting Limit</u>
Halogen Content	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

Remark: Reporting limit = Quantitation limit of analyte in sample

TO BE CONTINUED

TESTS CONDUCTED
(IV) Measurement Flowchart:

Test For Halogen Content
Reference Standard: EN 14582



TO BE CONTINUED

TESTS CONDUCTED

3 (A) TEST RESULT SUMMARY:

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

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

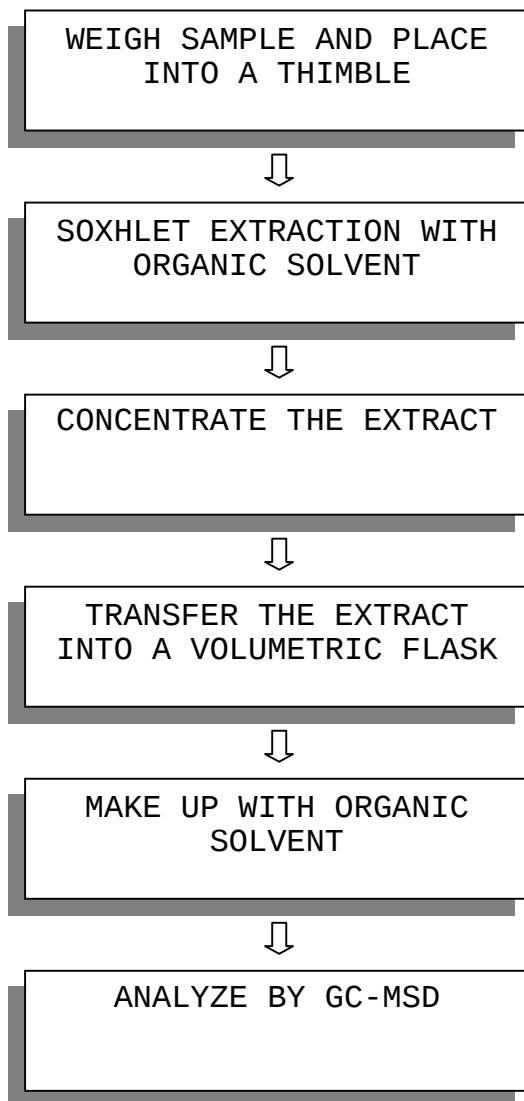
<u>TESTING ITEM</u>	<u>TESTING METHOD</u>	<u>REPORTING LIMIT</u>
HBCD (HEXABROMOCYCLODODECANE)	WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS	10 ppm

TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCD (HEXABROMOCYCLODODECANE) CONTENT



TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00345432

TESTS CONDUCTED

4 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> <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

5 PHthalate Content Test

WITH REFERENCE TO CPSC-CH-C1001-09.3, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

<u>TESTED COMPOUND</u>	<u>RESULT (%W/W)</u>	<u>LIMIT(%W/W)</u> <u>(MAX.)</u>
DI-BUTYL 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

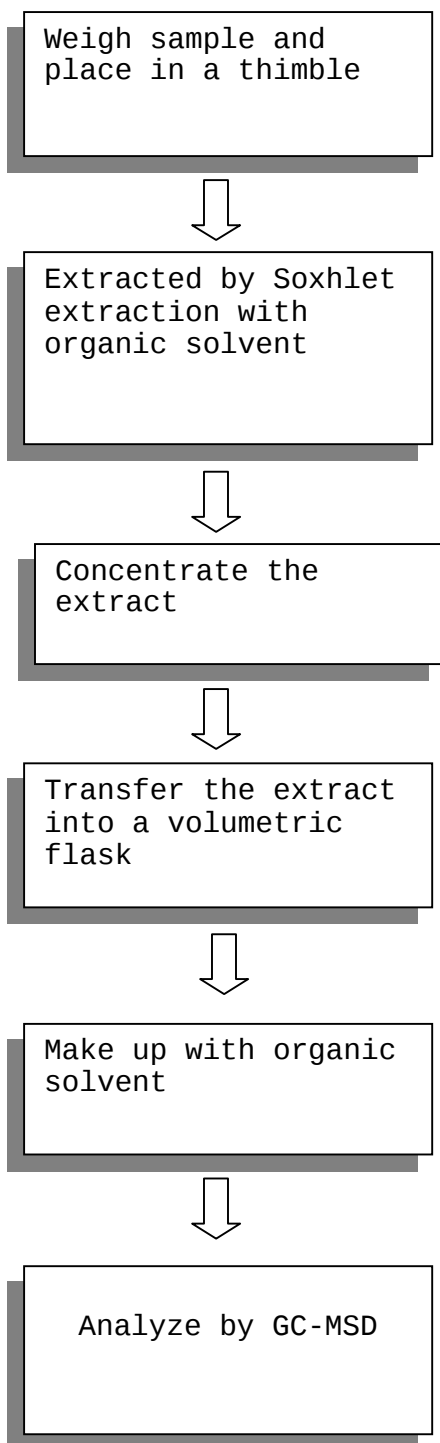
DATE SAMPLE RECEIVED: OCT.15, 2012

TESTING PERIOD: OCT.15, 2012 TO OCT.23, 2012

TO BE CONTINUED

TESTS CONDUCTED
MEASUREMENT FLOWCHART:

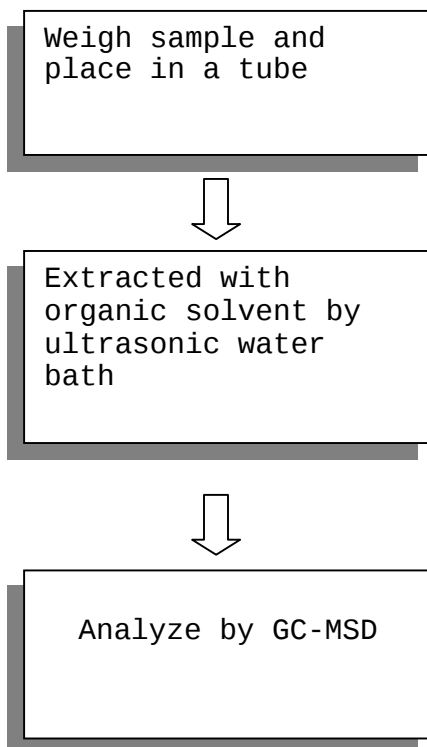
TEST FOR PHTHALATES CONTENTS (EN14372)



TO BE CONTINUED

TESTS CONDUCTED
MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (CPSC-CH-C1001-09.3)



TO BE CONTINUED

TESTS CONDUCTED



END OF REPORT

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TEST REPORT

NUMBER: SHAH00345639

APPLICANT: LITTELFUSE,INC.
800 E. NORTHWEST HWY
ATTN: A.DIVIETRO/D.UNTIEDT

DATE: OCT 29, 2012

SAMPLE DESCRIPTION:

ONE (1) SUBMITTED SAMPLE SAID TO BE **GREEN INK.**
PART DESCRIPTION : INK-GREEN.
PART NUMBER : 425907.
DATE SAMPLE RECEIVED : OCTOBER.15, 2012.
DATE TEST STARTED : OCTOBER.15, 2012.

TESTS CONDUCTED:

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

TO BE CONTINUED

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

JACOB LIN
GENERAL MANAGER

TESTS CONDUCTED

1 (I) Test Result Summary :

Testing Item	Result (ppm)
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content	ND
Polybrominated Biphenyls (PBBs)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)	
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

(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 ⁶⁺) 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

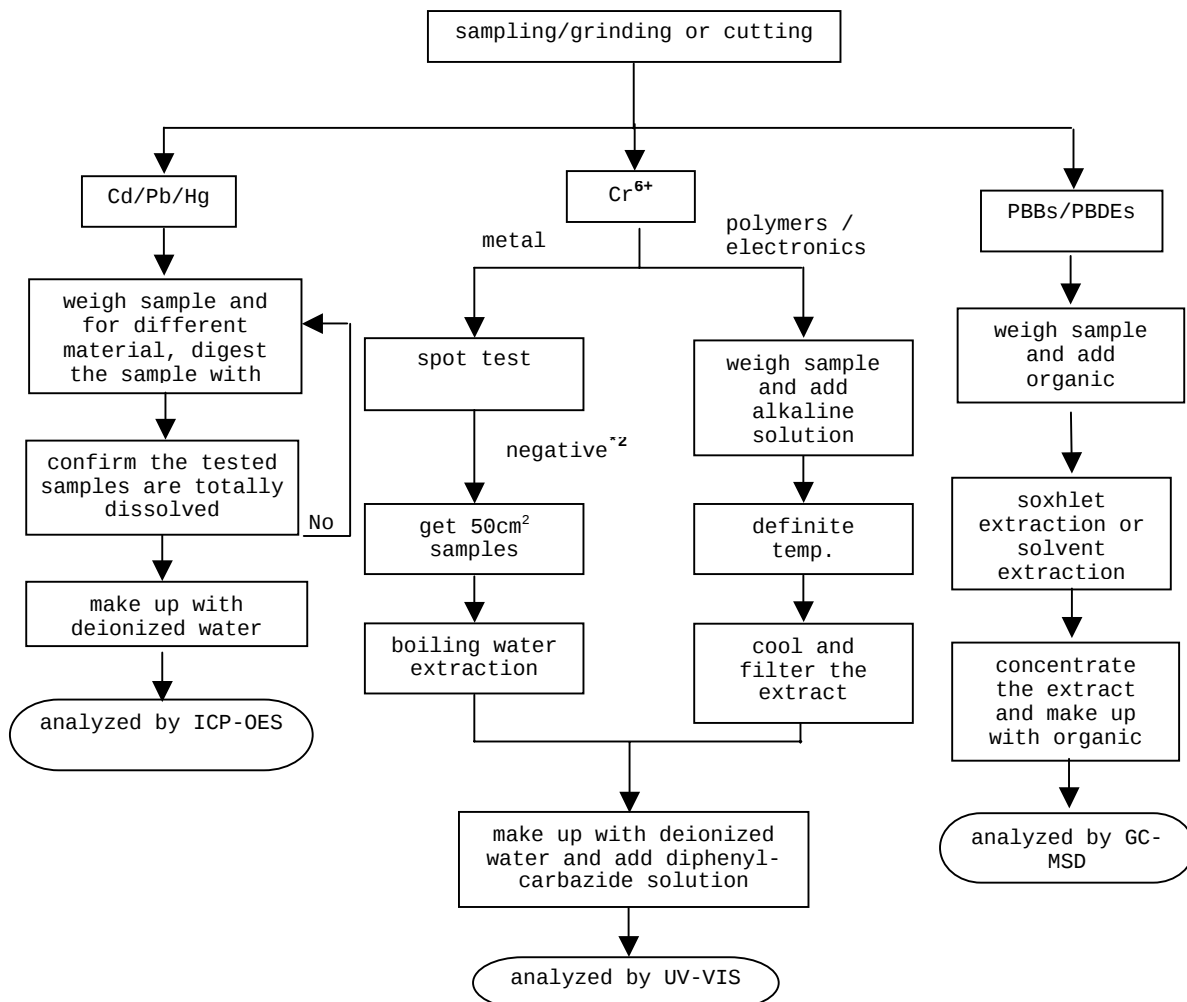
TO BE CONTINUED

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 ₃ ,HCl,HF,H ₂ O ₂ ,H ₃ BO ₃
Metals	HNO ₃ ,HCl,HF
Electronics	HNO ₃ ,HCl,H ₂ O ₂ ,HBF ₄

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

TO BE CONTINUED



TEST REPORT

NUMBER: SHAH00345639

TESTS CONDUCTED

2 (I) Test Result Summary :

Testing Item	Result (ppm)
Halogen Content	
Fluorine (F)	200
Chlorine (Cl)	650
Bromine (Br)	ND
Iodine (I)	ND

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

Responsibility Of Chemist : Leaf Liu

(III) Test Method:

Testing Item	Testing Method	Reporting Limit
Halogen Content	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

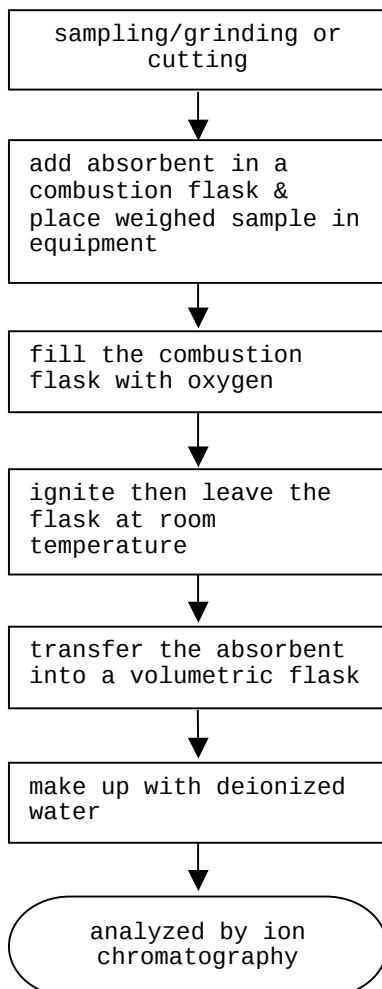
Remark: Reporting limit = Quantitation limit of analyte in sample

TO BE CONTINUED

TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Halogen Content
Reference Standard: EN 14582



TO BE CONTINUED



TEST REPORT

NUMBER: SHAH00345639

TESTS CONDUCTED

3 (A) TEST RESULT SUMMARY:

TESTING ITEM	RESULT(ppm)
HBCD (HEXABROMOCYCLODODECANE)	ND

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

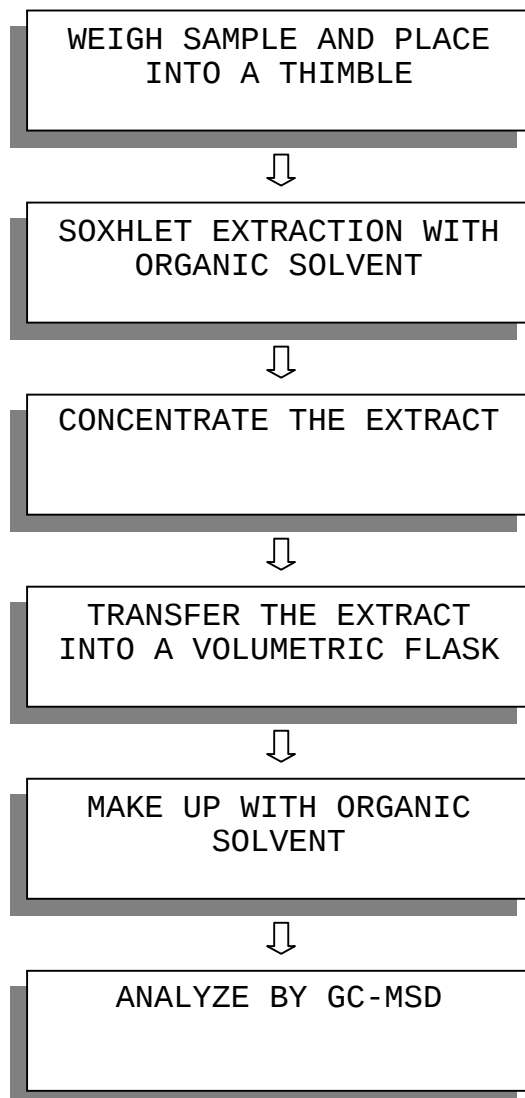
TESTING ITEM	TESTING METHOD	REPORTING LIMIT
HBCD (HEXABROMOCYCLODODECANE)	WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS	10 ppm

TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCD (HEXABROMOCYCLODODECANE) CONTENT



TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00345639

TESTS CONDUCTED

4 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> <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 FOR PHTHALATE CONTENT IN TOYS AND CHILDREN CARE ARTICLES.

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

5 PHthalate Content Test

WITH REFERENCE TO CPSC-CH-C1001-09.3, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

<u>TESTED COMPOUND</u>	<u>RESULT (%W/W)</u>	<u>LIMIT(%W/W)</u> <u>(MAX.)</u>
DI-BUTYL 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 & AMENDMENT H.R.2715 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

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

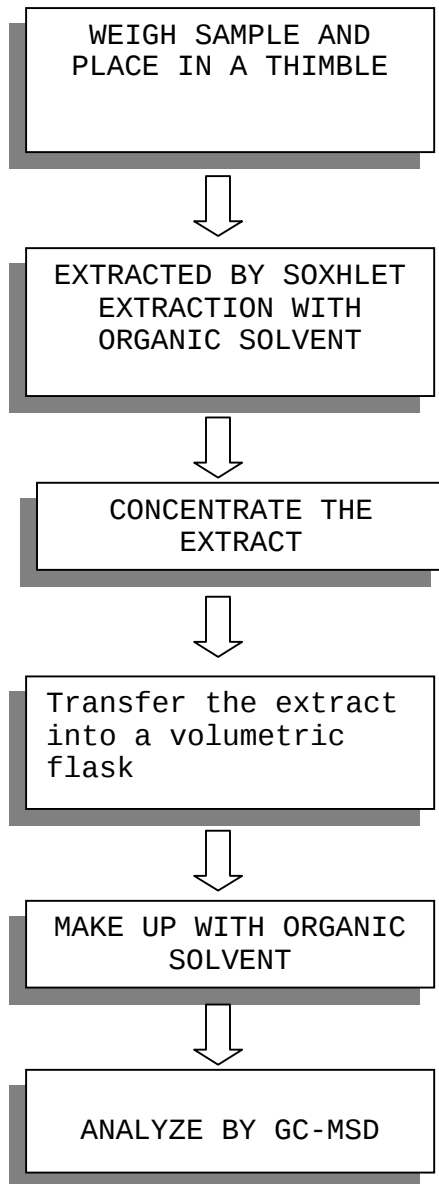
DATE SAMPLE RECEIVED : OCT.15, 2012
TESTING PERIOD : OCT.15, 2012 TO OCT.18, 2012

TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (EN14372)

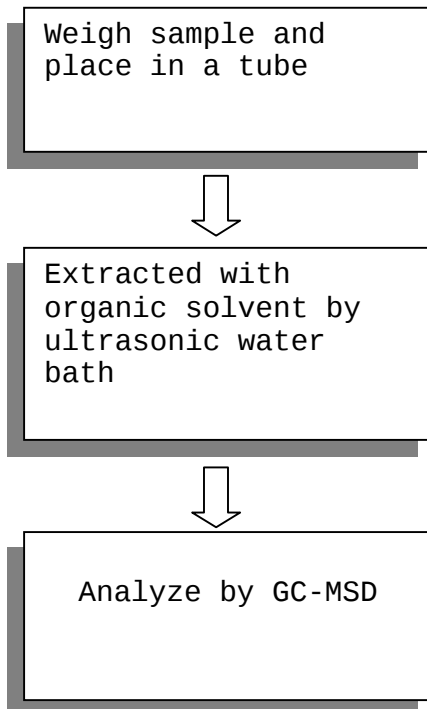


TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (CPSC-CH-C1001-09.3)



TO BE CONTINUED

TESTS CONDUCTED



END OF REPORT

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TEST REPORT

NUMBER: SHAH00345663

APPLICANT: LITTELFUSE, INC.
800 E. NORTHWEST HWY
ATTN: A.DIVIETRO/D.UNTIEDT

DATE: OCT 29, 2012

SAMPLE DESCRIPTION:

ONE (1) SUBMITTED SAMPLE SAID TO BE **VIOLET INK.**
PART DESCRIPTION : INK-VIOLET.
PART NUMBER : 425911.
DATE SAMPLE RECEIVED : OCTOBER.15, 2012.
DATE TEST STARTED : OCTOBER.15, 2012.

TESTS CONDUCTED:

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

TO BE CONTINUED

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

JACOB LIN
GENERAL MANAGER

TESTS CONDUCTED

1 (I) Test Result Summary :

Testing Item	Result (ppm)
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content	ND
Polybrominated Biphenyls (PBBs)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)	
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

(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 ⁶⁺) 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

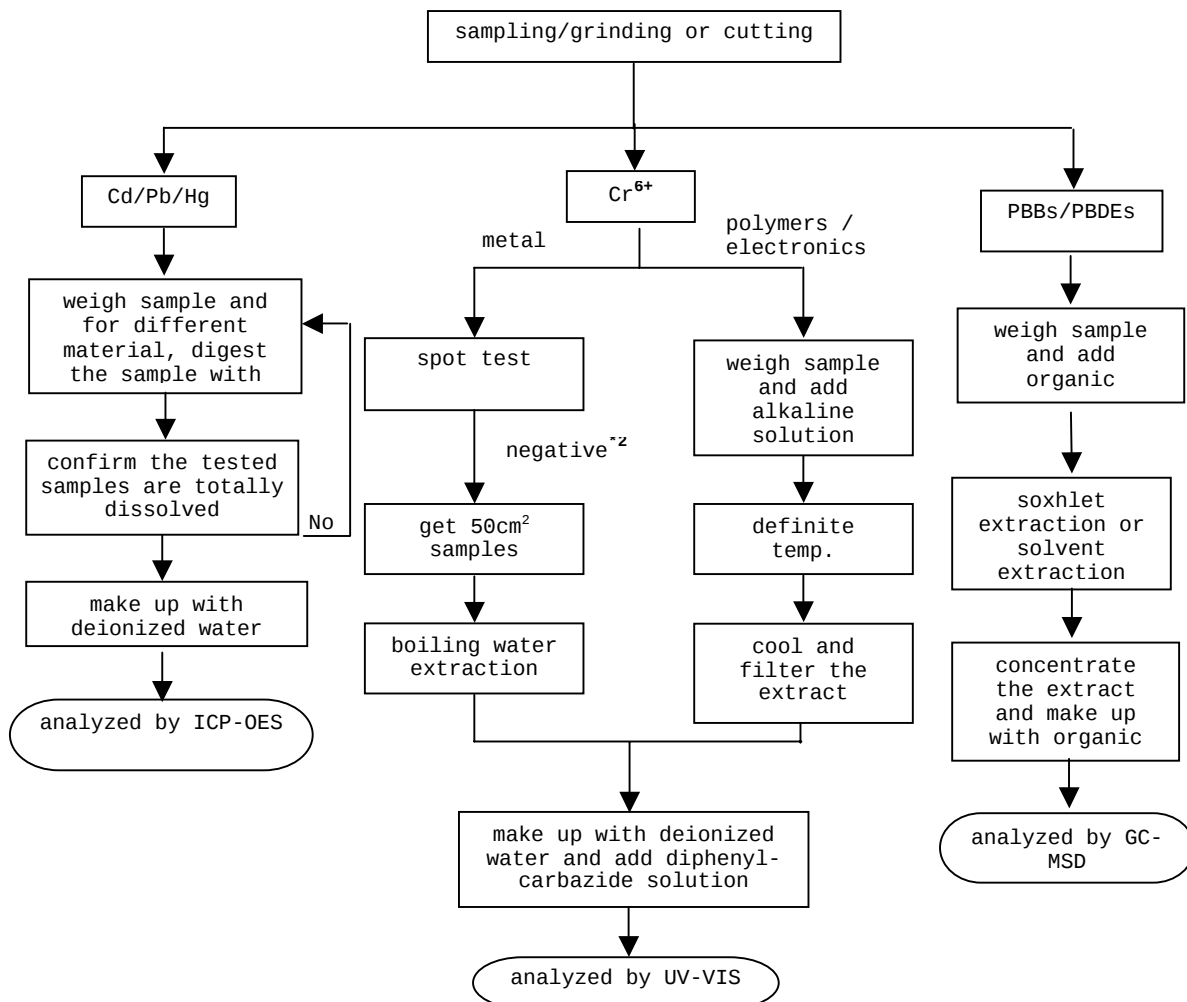
TO BE CONTINUED

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 ₃ ,HCl,HF,H ₂ O ₂ ,H ₃ BO ₃
Metals	HNO ₃ ,HCl,HF
Electronics	HNO ₃ ,HCl,H ₂ O ₂ ,HBF ₄

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

TO BE CONTINUED



TEST REPORT

NUMBER: SHAH00345663

TESTS CONDUCTED

2 (I) Test Result Summary :

Testing Item	Result (ppm)
Halogen Content	
Fluorine (F)	ND
Chlorine (Cl)	6800
Bromine (Br)	ND
Iodine (I)	ND

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

Responsibility Of Chemist : Leaf Liu

(III) Test Method:

Testing Item	Testing Method	Reporting Limit
Halogen Content	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

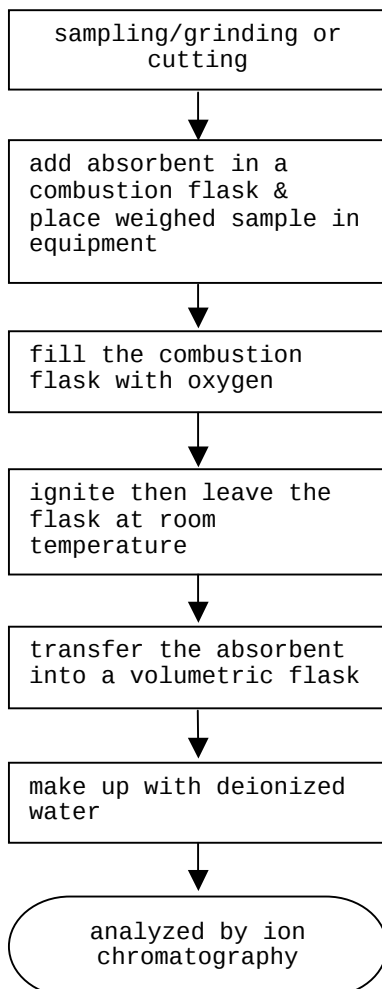
Remark: Reporting limit = Quantitation limit of analyte in sample

TO BE CONTINUED

TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Halogen Content
Reference Standard: EN 14582



TO BE CONTINUED



TEST REPORT

NUMBER: SHAH00345663

TESTS CONDUCTED

3 (A) TEST RESULT SUMMARY:

TESTING ITEM	RESULT(ppm)
HBCD (HEXABROMOCYCLODODECANE)	ND

REMARKS:

ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(B) TEST METHOD :

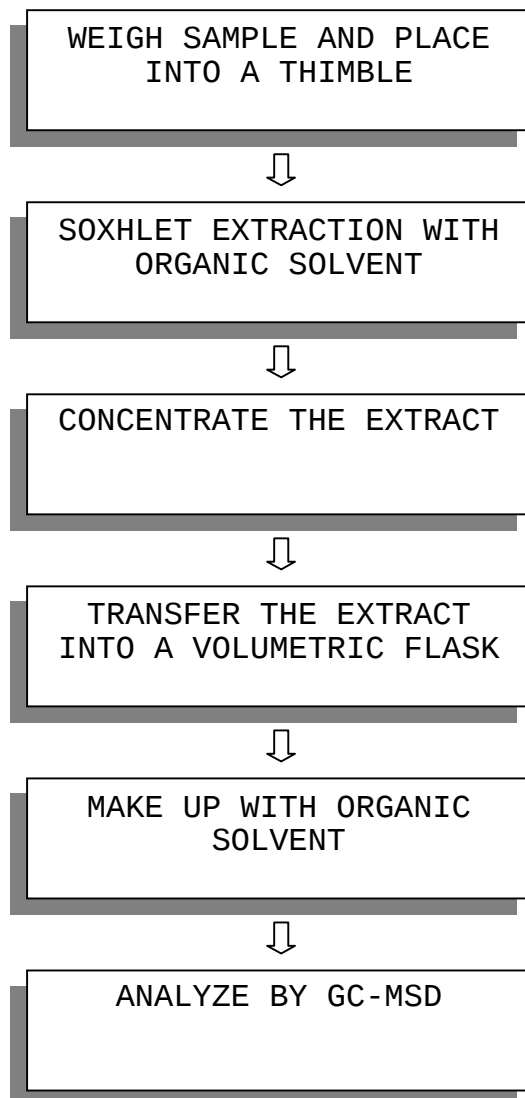
TESTING ITEM	TESTING METHOD	REPORTING LIMIT
HBCD (HEXABROMOCYCLODODECANE)	WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS	10 ppm

TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCD (HEXABROMOCYCLODODECANE) CONTENT

*****
TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00345663

TESTS CONDUCTED

4 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> <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 FOR PHTHALATE CONTENT IN TOYS AND CHILDREN CARE ARTICLES.

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

5 PHthalate Content Test

WITH REFERENCE TO CPSC-CH-C1001-09.3, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

<u>TESTED COMPOUND</u>	<u>RESULT (%W/W)</u>	<u>LIMIT(%W/W)</u> <u>(MAX.)</u>
DI-BUTYL 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 & AMENDMENT H.R.2715 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING SPECIFIED PHTHALATES.

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

DATE SAMPLE RECEIVED: OCT.15, 2012

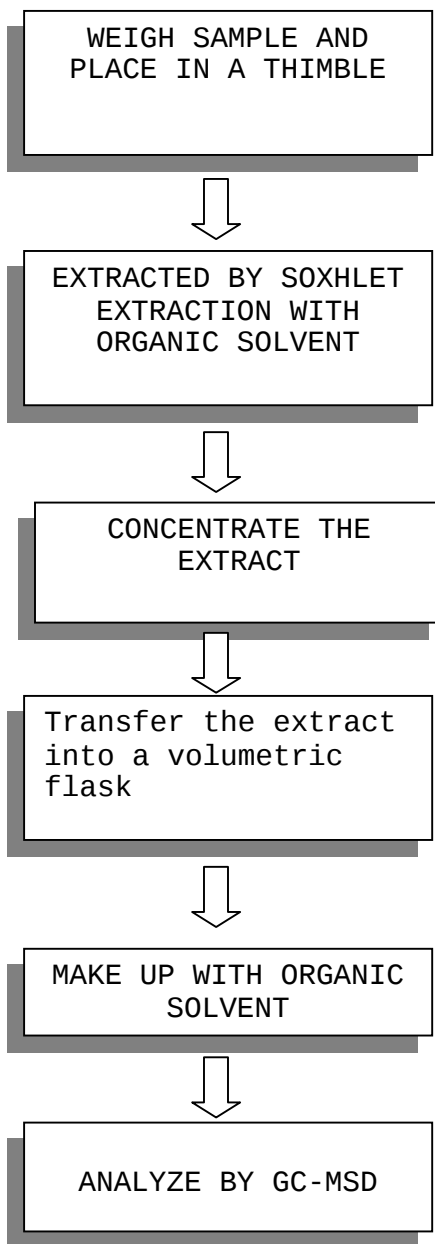
TESTING PERIOD : OCT.15, 2012 TO OCT.23, 2012

TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (EN14372)

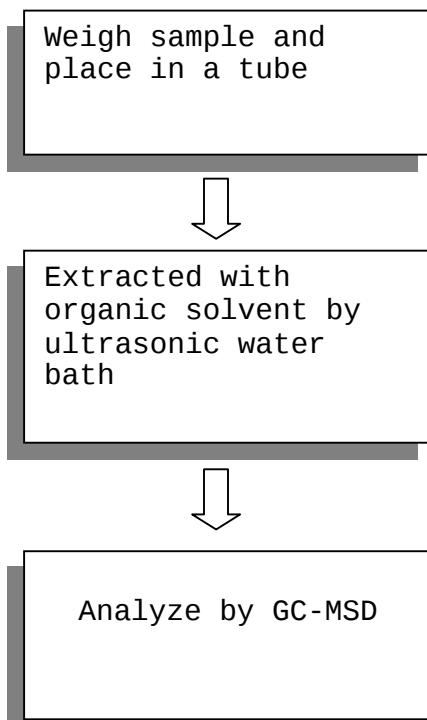


TO BE CONTINUED

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (CPSC-CH-C1001-09.3)



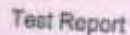
TO BE CONTINUED

TESTS CONDUCTED



END OF REPORT

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No. DAVE C-1012703871

Date: 05 Jul 2012

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SHENZHEN GUANGTONG CITY METAL MATERIAL LIMITED COMPANY
ALIAN INDUSTRIAL LONGGANG SHENZHEN
GUANGDONG CHINA

The following sample(s) was/were submitted and identified on behalf of the client as Copper-beryllium alloy rod 鈳鈹合金

SGS Job No. 12507521 - S2
Tested Sample Information Copper-beryllium alloy rod 铍青铜
SGS Internal Reference No. Z1
Date of Sample Received 01 Jul 2012
Testing Period 01 Jul 2012 - 05 Jul 2012

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

Test Method: _____

Test Results
Please refer to next page(s)

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

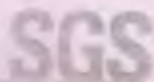
Signed for and on behalf of
SGS-CSTC Ltd.

Siva

Sine Zhou
Approved Signatory



地址: 广州市天河区科韵路中电软件园1010室 邮编: 510662 电话: 020-22158888 020-22158877
 020-22158899 020-22158872 电子邮箱: info@china-robot.com
 网站: www.china-robot.com



Test Report

No: CANEC1002803901

Date: 05 Jul 2012

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Test Results:

ID for specimen 1

CAN10-028039-001

Description for specimen 1

Copper-coated metal rod

RoHS Directive 2002/95/EC

Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Cadmium (Cd)	mg/kg	IEC 62321:2008 ICP-OES	N.D.	2	100
Lead (Pb)	mg/kg	IEC 62321:2008 ICP-OES	26	2	1000
Mercury (Hg)	mg/kg	IEC 62321:2008 ICP-OES	N.D.	2	1000
Hexavalent Chromium (CrVI) by boiling water extraction	-	IEC 62321:2008 UV-Vis	Negative	-	2

Note:

1. mg/kg = ppm

2. N.D. = Not Detected (< MDL)

3. MDL = Method Detection Limit

4. - = Spot-Test:

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

(The tested sample should be further verified by boiling-water-extraction method if the spot test result is negative or cannot be confirmed.)

Boiling-water-extraction:

Negative = Absence of CrVI coating

Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² sample surface area.

Storage conditions and production date of the tested sample are unavailable and thus results of CrVI represent status of the sample at the time of testing.

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

Negative indicates the absence of CrVI on the tested areas.

6. " " = Not regulated

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Member of the SGS Group (RUS 14)

ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bessie Wang / Ross Zhan
- 2) Name of the person in charge of testing: Adam Yu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr6+ test method excluded)



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