ICP Test Report Certification Packet

Company Name: Littelfuse, Inc.

Product Type: Metal Oxide Varistors

Product Series: DA&DB Series RoHS Compliant models

Issue Date: Sep. 18, 2012

It is hereby certified by Littelfuse, Inc. that there is neither RoHS (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: David Huang

< DGLF Environmental, Health & Safety Engineer >

(1) Parts, sub-materials and unit parts

This document covers Metal Oxide Varistors LA series RoHS-Compliant models manufactured by Littelfuse, Inc.

Please see Table 1 for raw materials used.

(2) The ICP data on all measurable substances

Please see appropriate pages as identified in Table 1

Remarks :

Pb (lead) contained in copper alloy containing up to 4% is categorized as exempt under section 6 of the RoHS Annex.

Table 1: List of Raw Materials covered by this report

NO.	P/N	Raw Material Description	Page
1	N/A	DD Black Disc	3-7
2	N/A	Silver paste as internal electrodes	8-19
3	N/A	Solder paste	20-31
4	N/A	Terminals	32-36
5	N/A	Epoxy Resin PCE210 4A Red	37-45
6	N/A	Industrial Coating Resin	46-53
7	N/A	Base & Lid	54-61
8	N/A	Copper Screw, separating from Base & Lid	62-65
9	N/A	Screw & Washier	66-69

Test Report Number: SZHH00699643

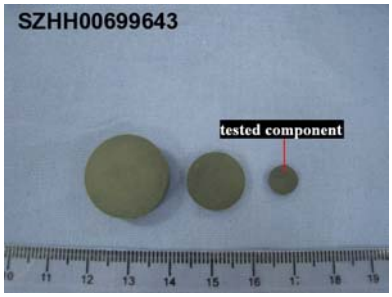
Applicant: LITTELFUSE, INC
8755 WEST HIGGINS ROAD SUITE
500CHICAGO IL 60631 USA

Date: Jun 19, 2012

Attn: KRISTEEN BACILA/ARSENIO CESISTA JR.

Sample Description:

One (1) submitted sample said to be **DD black disc.**
Tested component: black solid material.



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Tests conducted:

As requested by the applicant, refer to attached page(s) for details.

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Conclusion:

Tested Samples	Standard	Result
Tested component of submitted sample	Restriction of the use of certain hazardous substance in electrical electronic and equipment (RoHS Direction 2002/95/EC and supersedure 2011/65/EU)	Pass

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Authorized by:
For Intertek Testing Services
Shenzhen Ltd.

Ben N.L. Lin
General Manager

Intertek Testing Services Shenzhen Ltd.-TFH Division
7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Test Report Number: SZHH00699643

Tests Conducted

RoHS Chemical Test

(A) Test Result Summary:

Testing Item	Result
Cadmium (Cd) Content (mg/kg)	ND(<2)
Lead (Pb) Content (mg/kg)	ND(<2)
Mercury (Hg) Content (mg/kg)	ND(<2)
Chromium (VI)(Cr^{6+}) Content (mg/kg)	10
Polybrominated Biphenyls (PBBs)(mg/kg)	
Monobromobiphenyl (MonoBB)	ND(<5)
Dibromobiphenyl (DiBB)	ND(<5)
Tribromobiphenyl (TriBB)	ND(<5)
Tetrabromobiphenyl (TetraBB)	ND(<5)
Pentabromobiphenyl (PentaBB)	ND(<5)
Hexabromobiphenyl (HexaBB)	ND(<5)
Heptabromobiphenyl (HeptaBB)	ND(<5)
Octabromobiphenyl (OctaBB)	ND(<5)
Nonabromobiphenyl (NonaBB)	ND(<5)
Decabromobiphenyl (DecaBB)	ND(<5)
Polybrominated Diphenyl Ethers (PBDEs)(mg/kg)	
Monobromodiphenyl Ether (MonoBDE)	ND(<5)
Dibromodiphenyl Ether (DiBDE)	ND(<5)
Tribromodiphenyl Ether (TriBDE)	ND(<5)
Tetrabromodiphenyl Ether (TetraBDE)	ND(<5)
Pentabromodiphenyl Ether (PentaBDE)	ND(<5)
Hexabromodiphenyl Ether (HexaBDE)	ND(<5)
Heptabromodiphenyl Ether (HeptaBDE)	ND(<5)
Octabromodiphenyl Ether (OctaBDE)	ND(<5)
Nonabromodiphenyl Ether (NonaBDE)	ND(<5)
Decabromodiphenyl Ether (DecaBDE)	ND(<5)

Chemist: Wang Haijun/Zeng Guoliang

mg/kg = milligram per kilogram = ppm
< = Less than
ND = Not detected

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Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Tests Conducted

(B) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr^{6+})	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

The above limits were quoted from 2002/95/EC and supersedure 2011/65/EU for homogeneous material.

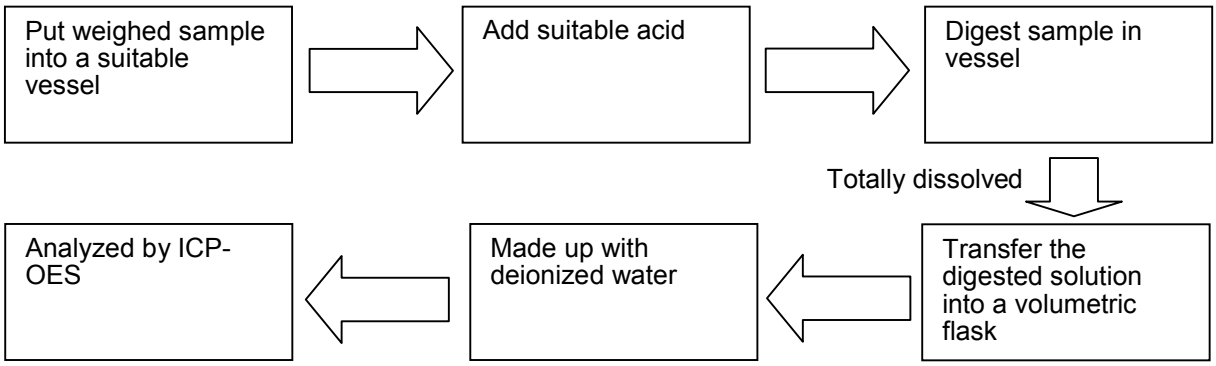
(C) Test Method:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Lead (Pb) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Mercury (Hg) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Chromium (VI)(Cr^{6+}) Content	With reference to IEC 62321 Edition 1.0:2008, by alkaline digestion and determined by UV-VIS Spectrophotometer	1 mg/kg
Polybrominated Biphenyls (PBBs)& Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321 Edition 1.0:2008, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	5 mg/kg

Date sample received: Jun 09, 2012
Testing period: Jun 09, 2012 to Jun 16, 2012

(D) Measurement Flowchart:

1. Test for Cd/Pb Contents



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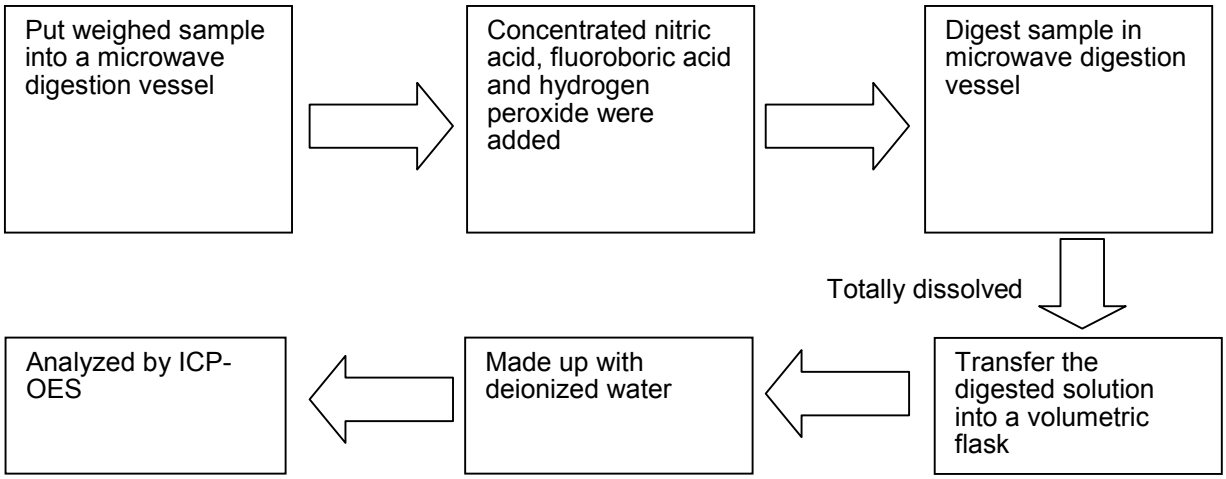
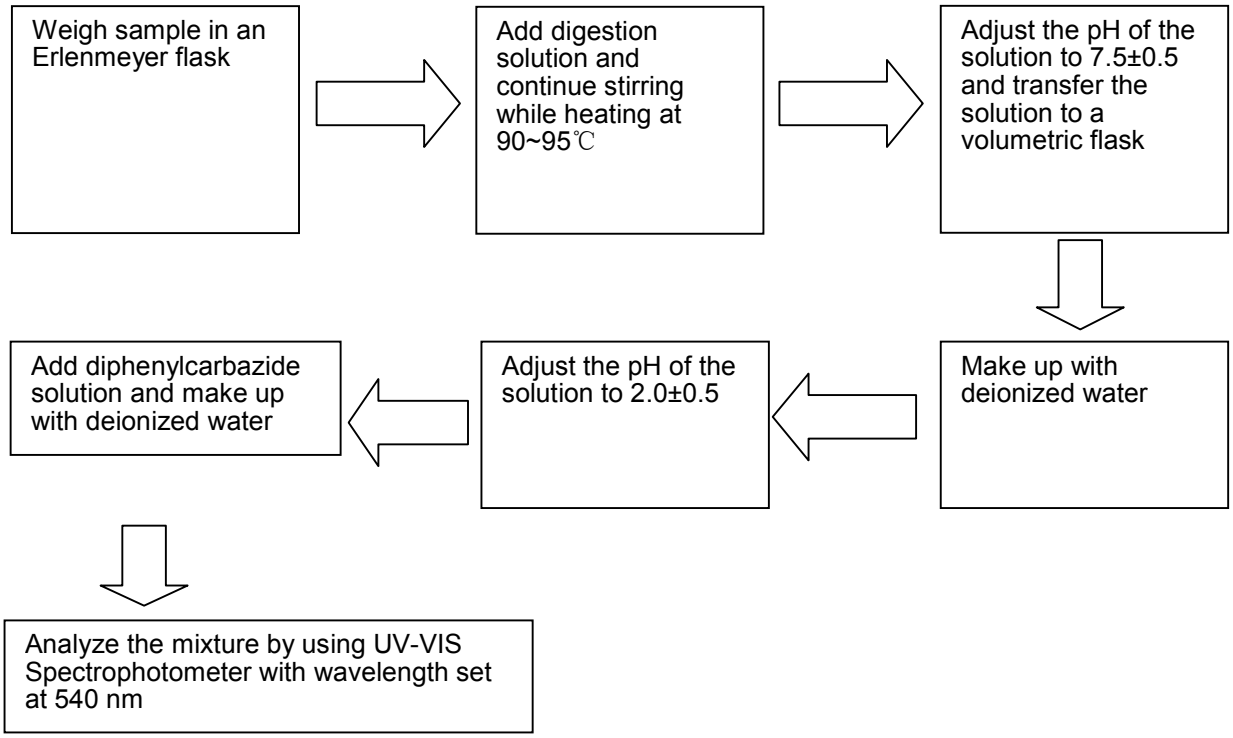
Tests Conducted

2. Test for Hg Content



3. Test for Chromium (VI) (Cr^{6+}) Content (Alkaline Digestion)



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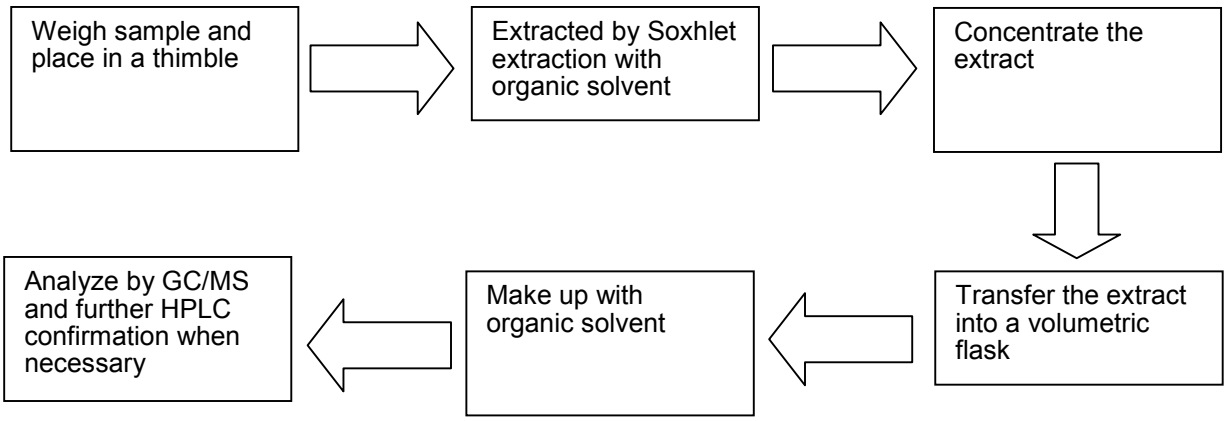
Tests Conducted

4. Test for PBBs/PBDEs Contents



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End of report

Intertek Testing Services Shenzhen Ltd.-TFH Division
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Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Test Report

No. SHAEC1201680106 Date: 21 Feb 2012

SHIN-NIHON KAKIN CO.,LTD

1-6,MIYAMOTO,ITABASHI,TOKYO.JAPAN

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

SGS Job No. :	SP12-003156 - SH
Model No. :	SP-A6PL
Date of Sample Received :	17 Feb 2012
Testing Period :	17 Feb 2012 - 21 Feb 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

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233
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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA12-016801.006	Green paste

Remarks :

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

RoHS Directive 2011/65/EU

Test Method : With reference to IEC 62321:2008
(1) Determination of Cadmium by ICP-OES.
(2) Determination of Lead by ICP-OES.
(3) Determination of Mercury by ICP-OES.
(4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
(5) Determination of PBBs / PBDEs content by GC-MS.

Test Item(s)	Limit	Unit	MDL	*006*
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

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
Testing Service Certification
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Test Item(s)	Limit	Unit	MDL	*006*
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) Result shown is of the total weight of wet sample.

Halogen

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

Test Item(s)	Unit	MDL	*006*
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

Notes :

(1) Result shown is of the total weight of wet sample.

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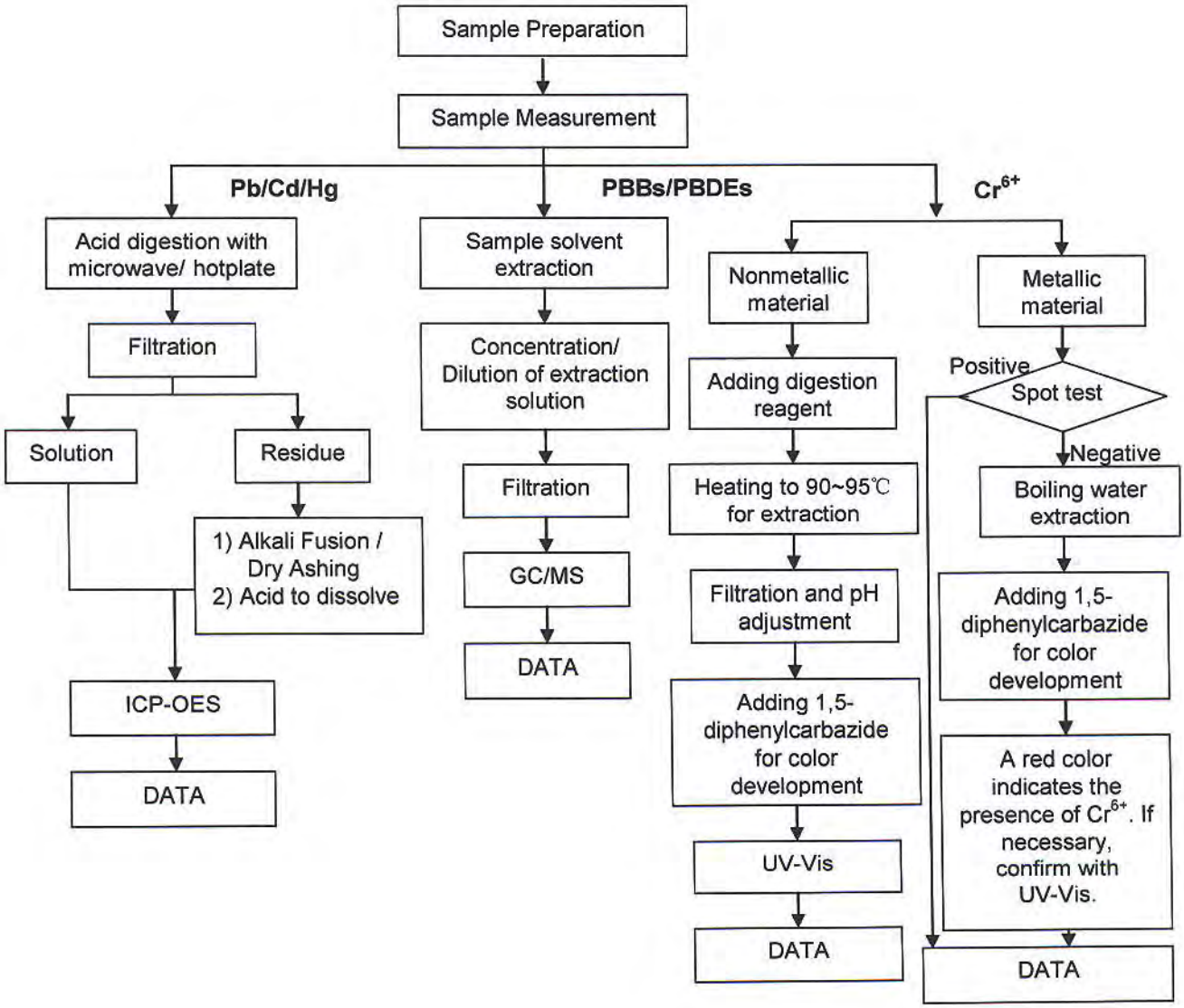
ATTACHMENTS

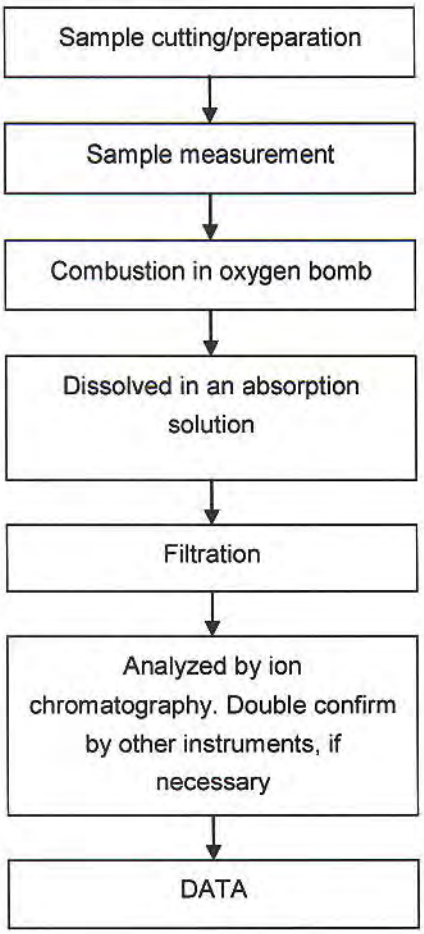
RoHS Testing Flow Chart

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)



Halogen Testing Flow Chart

1) Name of the person who made testing: Sisily Yin
2) Name of the person in charge of testing: Daisy Gong



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Sample photo:

SHA12-016801.006

SGS authenticate the photo on original report only

*** End of Report ***

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Test Report

No. SHAEC1203840702 Date: 09 Apr 2012

SHIN-NIHON KAKIN CO.,LTD.

1-6,MIYAMOTO, ITABASHI,TOKYO,JAPAN

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

SGS Job No. :	SP12-007978 - SH
Model No. :	SP-A6PL
Date of Sample Received :	05 Apr 2012
Testing Period :	05 Apr 2012 - 09 Apr 2012
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).

Signed for and on behalf of
SGS-CSTC Ltd.

Fan Jingjie, JJ
Approved Signatory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA12-038407.002	Ink green mud

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

Phthalates

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

Test Item(s)	Unit	MDL	*002*
Bis-(2-ethylhexyl) Phthalate (DEHP)	%	0.003	ND
Benzylbutyl Phthalate (BBP)	%	0.003	ND
Dibutyl Phthalate (DBP)	%	0.003	ND

Notes :

(1) DBP,BBP,DEHP Reference information: Entry 51 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC);
i) Shall not be used as substances or in mixtures, in concentrations greater than 0,1 % by weight of the plasticised material, in toys and childcare articles.
ii) Toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.
Please refer to Regulation (EC) No 552/2009 to get more detail information

Hexabromocyclododecane (HBCDD)

Test Method : With reference to US EPA 3550C: 2007, analysis was performed by GC-MS.

Test Item(s)	Unit	MDL	*002*
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

Remark: Result shown is of the total weight of wet sample.

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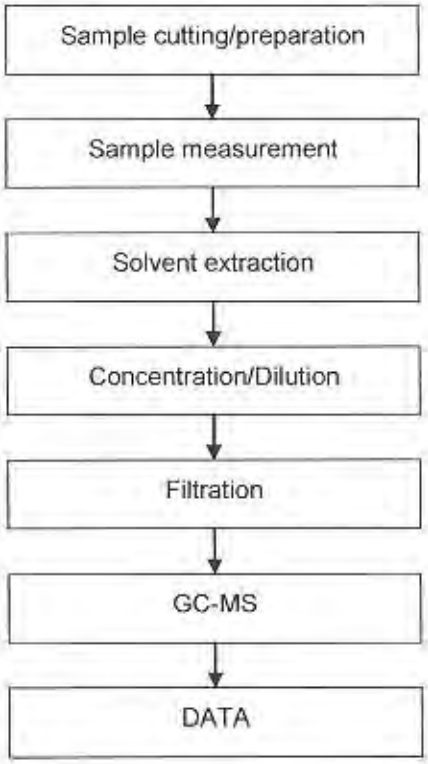
ATTACHMENTS

Phthalates Testing Flow Chart

1) Name of the person who made testing: Elyn Yao
2) Name of the person in charge of testing: Rachel Zhang



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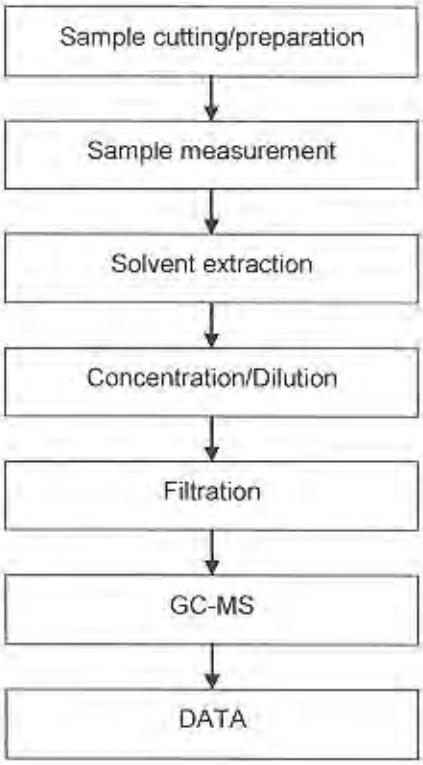
HBCDD Testing Flow Chart

1) Name of the person who made testing: Gary Xu
2) Name of the person in charge of testing: Elim Lin



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Sample photo:

SHA12-038407.002

SGS authenticate the photo on original report only

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CTI 华测检测

Test Report

Report No. RLSZE001191100004

Applicant DONGGUAN QIHANG XIYE MANUFACTURING CO.,LTD
Address NO.1 INDUSTRIAL AREA XIAGANG ,CHANG'AN TOWN ,DONGGUAN CITY

Report on the submitted sample(s) said to be

Sample Name	LEAD-FREE SOLDER PASTE
Sample Description	Gray paste
Part No.	MIXTURE OF QH#LF96, QH#LF97, QH#LF98, QH#LF658, QH#LF601, QH#LT658, QH#LT601, QH#LT658C, QH#LF96H, QH#LF97H, QH#LF98H, QH#LF658H, QH#LF601H, QH#LT658H, QH#LT601H, QH#LT658CH
Color	Silver
Sample Received Date	Mar. 3, 2012
Testing Period	Mar. 3, 2012 to Mar. 8, 2012

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs) in the submitted sample(s).

Test Method

Test Item(s)	Test Method	Measured Equipment(s)	MDL
Lead(Pb)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES	2 mg/kg
Cadmium(Cd)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES	2 mg/kg
Mercury(Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES	2 mg/kg
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis	2 mg/kg
Polybrominated Biphenyls(PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5 mg/kg
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5 mg/kg

Test Result(s) Please refer to the following page(s).

Conclusion:

Tested Sample	According to directive	Result
Submitted Sample	2011/65/EU*	Pass

*=July 1, 2011, the EU Official Journal (OJ) released the directive 2011/65/EU which as a new version of RoHS Directive (2002/95/EC). The revised directive has entered into force on the twentieth day after its publication in the OJ.

Tested by Rick Inspected by Vargas

Approved by Technical Manager Date Mar. 8, 2012

CENTRE TESTING INTERNATIONAL CTI SZ03

No. 11363955

Test Report

Report No. RLSZE001191100004

Test Result(s)

Tested Item(s)	Content
Lead(Pb)	55 mg/kg
Cadmium (Cd)	N.D.
Mercury(Hg)	N.D.
Hexavalent Chromium(Cr(VI))	N.D.

Tested Item(s)	Content
Polybrominated Biphenyls (PBBs)	
Monobromobiphenyl	N.D.
Dibromobiphenyl	N.D.
Tribromobiphenyl	N.D.
Tetrabromobiphenyl	N.D.
Pentabromobiphenyl	N.D.
Hexabromobiphenyl	N.D.
Heptabromobiphenyl	N.D.
Octabromobiphenyl	N.D.
Nonabromobiphenyl	N.D.
Decabromobiphenyl	N.D.

Tested Item(s)	Content
Polybrominated Diphenyl Ethers (PBDEs)	
Monobromodiphenyl ether	N.D.
Dibromodiphenyl ether	N.D.
Tribromodiphenyl ether	N.D.
Tetrabromodiphenyl ether	N.D.
Pentabromodiphenyl ether	N.D.
Hexabromodiphenyl ether	N.D.
Heptabromodiphenyl ether	N.D.
Octabromodiphenyl ether	N.D.
Nonabromodiphenyl ether	N.D.
Decabromodiphenyl ether	N.D.

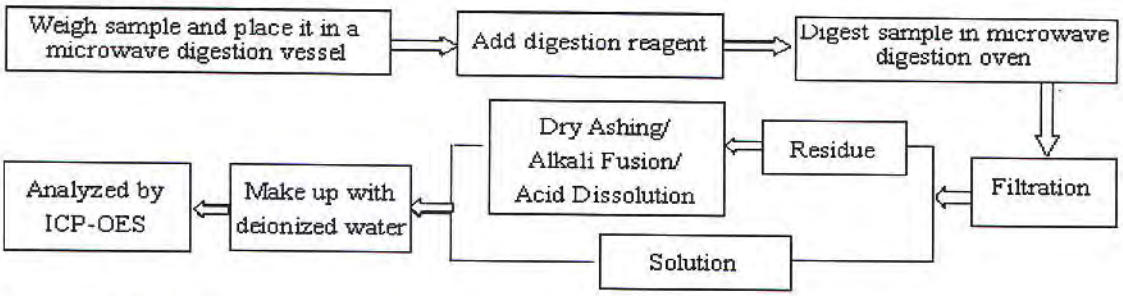
Note: **The sample had been dissolved totally tested for Lead, Cadmium, Mercury.**
-MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million

Test Report

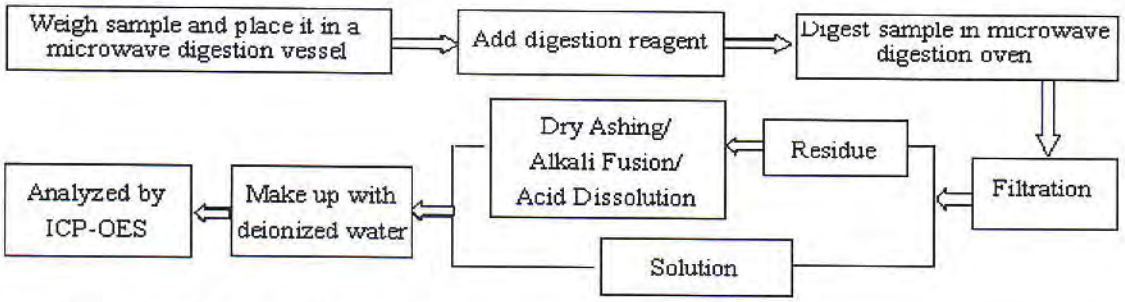
Report No. RLSZE001191100004

Test Process

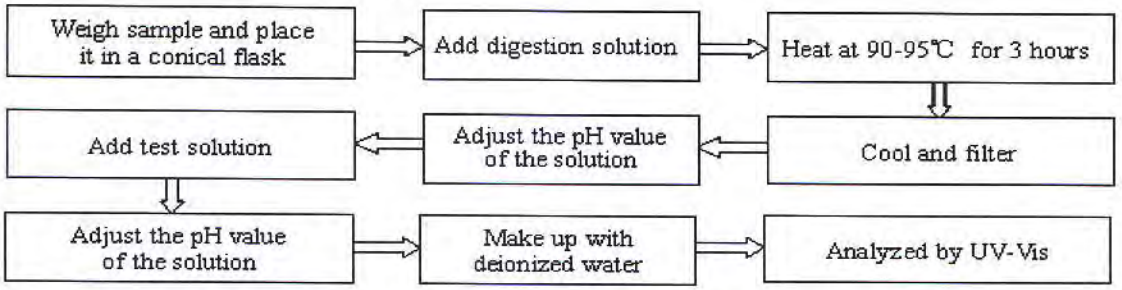
1. Lead(Pb), Cadmium(Cd)



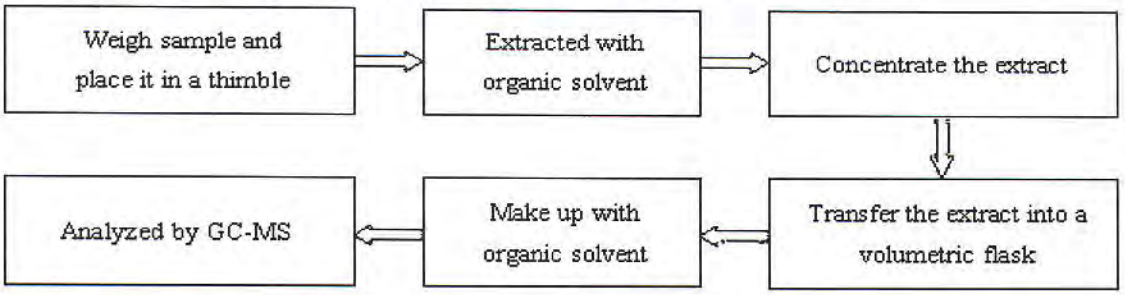
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs)



Test Report

Report No. RLSZE001191100004

Photo(s) of the sample(s)

*** End of report ***

CTI 华测检测

Test Report

Report No. RLSZE001296390001 Page 1 of 3

Applicant DONGGUAN QIHANG XIYE MANUFACTURING CO.,LTD
Address NO.1 INDUSTRIAL AREA XIAGANG ,CHANG'AN TOWN ,DONGGUAN CITY

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

Sample Name	LEAD-FREE SOLDER PASTE
COLOR	silver
Material	TIN
Sample Received Date	May. 25, 2012
Testing Period	May. 25, 2012 to May. 29, 2012

Test Requested As specified by client, to test Fluorine(F), Chlorine(Cl), Bromine(Br), Iodine(I) in the submitted sample(s).

Test Method

Test Item(s)	Test Method	Measured Equipment(s)	MDL
Fluorine(F)	Refer to BS EN 14582:2007	IC	10 mg/kg
Chlorine(Cl)	Refer to BS EN 14582:2007	IC	10 mg/kg
Bromine(Br)	Refer to BS EN 14582:2007	IC	10 mg/kg
Iodine(I)	Refer to BS EN 14582:2007	IC	10 mg/kg

Test Result(s) Please refer to the following page(s).

Tested by Rick Li Reviewed by Vargas He

Approved by Danny Liu Technical Manager Date May. 29, 2012

CENTRE TESTING INTERNATIONAL CTI SZ03

No. 38791053

Test Report

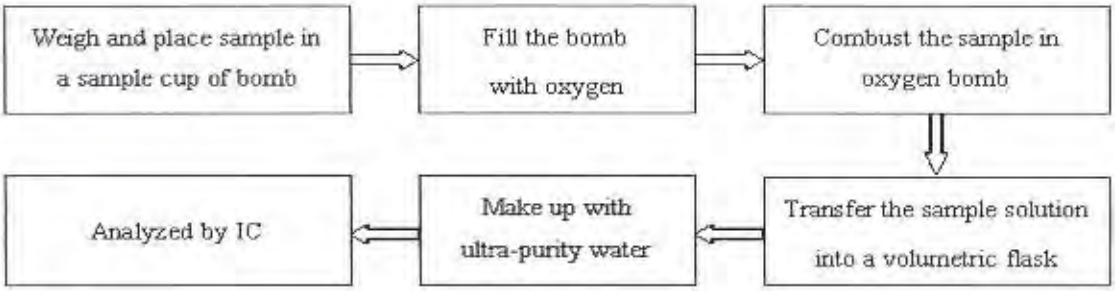
Test Result(s)

Tested Item(s)	Content
Halogen(s)	
Fluorine (F)	N.D.
Chlorine (Cl)	N.D.
Bromine (Br)	N.D.
Iodine (I)	N.D.

Tested Sample/Part Description Gray paste

Note: -MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million

Test Process



Test Report

Report No. RLSZE001296390001

Photo(s) of the sample(s)

*** End of report ***

Test Report

DONGGUAN QI HANG XI YE MANUFACTURING CO.,LTD

NO.1 INDUSTRUAL PARK,XIAGANG,CHANGAN TOWN,DONGGUAN CITY
CHINA

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

SGS Job No. :	CP12-017386 - GZ
Date of Sample Received :	23 Apr 2012
Testing Period :	23 Apr 2012 - 27 Apr 2012
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).

Signed for and on behalf of
SGS-CSTC Ltd.

Silva Zhou
Approved Signatory

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	CAN12-047550.001	Grey paste

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

Hexabromocyclododecane (HBCDD)

Test Method : Determination of HBCDD by GC-MS based on IEC 62321:2008.

Test Item(s)	Unit	MDL	*001*
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

Notes :

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

Phthalates

Test Method : Determination of phthalates by GC-MS based on EN 14372:2004.

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

Notes :

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

Remark : The result(s) shown is/are of the total weight of wet sample.

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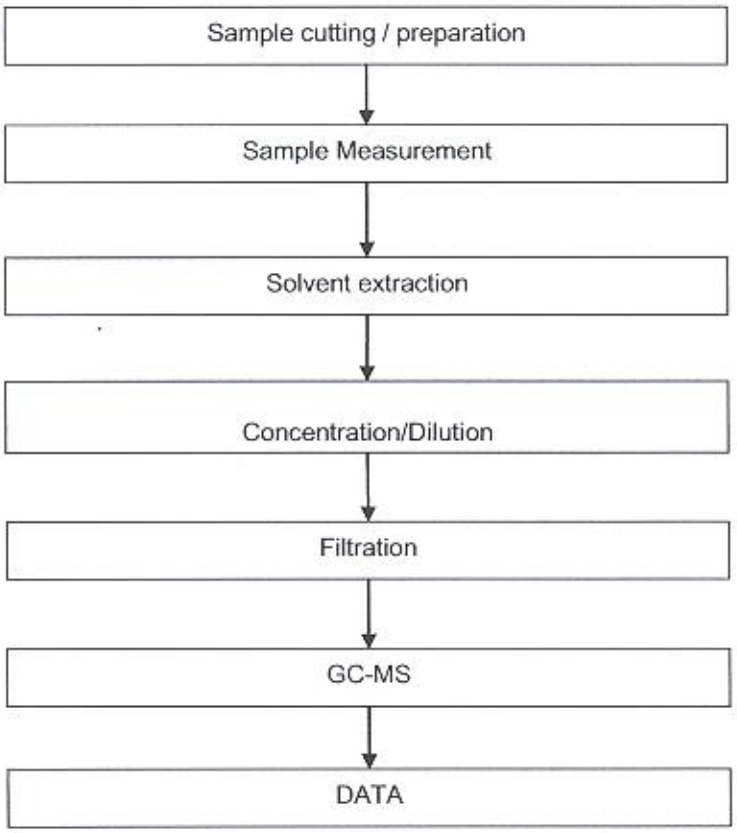
ATTACHMENTS

HBCDD Testing Flow Chart

1) Name of the person who made testing: Cutey Yu
2) Name of the person in charge of testing: Ryan Yang



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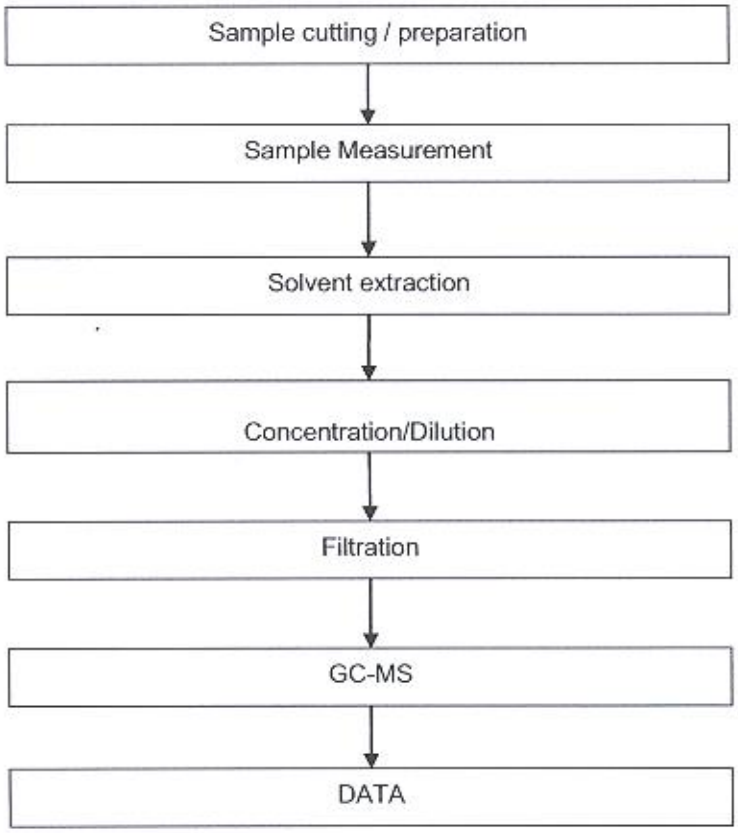
ATTACHMENTS

Phthalates Testing Flow Chart

1) Name of the person who made testing: Tina Zhao
2) Name of the person in charge of testing: Ryan Yang



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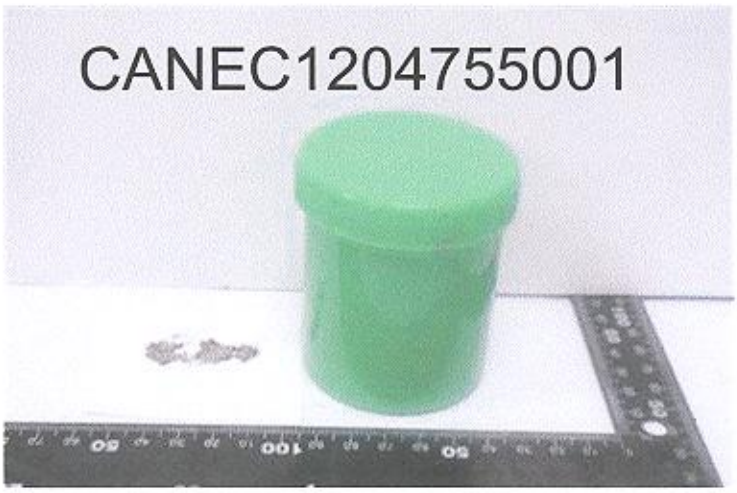
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Sample photo:



CAN12-047550.001

SGS authenticate the photo on original report only

*** End of Report ***

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Test Report Number: SZHH0071861302

Applicant: LITTELFUSE, INC
8755 WEST HIGGINS ROAD SUITE
500CHICAGO IL 60631 USA

Date: Aug 15, 2012

Attn: KRISTEEN BACILA/ARSENIO CESISTA JR.

Sample Description:
One (1) submitted sample said to be **terminals.**
Tested component: silver-grey plated metal.

****

Tests conducted:
As requested by the applicant, refer to attached page(s) for details.

****

Conclusion:

Tested Samples	Standard	Result
Tested component of submitted sample	Restriction of the use of certain hazardous substance in electrical and electronic equipment (RoHS Directive 2002/95/EC and superseding 2011/65/EU)	Pass

****

Authorized by:
For Intertek Testing Services
Shenzhen Ltd.

Ben N.L. Lin
General Manager

Intertek Testing Services Shenzhen Ltd.-TFH Division
7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Test Report Number: SZHH0071861302

Tests Conducted

RoHS Chemical Test

(A) Test Result Summary:

Testing Item	Result
Cadmium (Cd) Content (mg/kg)	ND(<2)
Lead (Pb) Content (mg/kg)	ND(<2)
Mercury (Hg) Content (mg/kg)	ND(<2)
Chromium (VI)(Cr^{6+}) Result (By Boiling Water Extraction on Metal)(mg/kg with $50cm^2$)	Negative (<0.02)

Chemist: Wang Haijun

mg/kg = milligram per kilogram = ppm
mg/kg with $50cm^2$ = milligram per kilogram with 50 square centimetre
< = Less than
ND = Not detected

Positive = A positive test result indicated the presence of Cr(VI) at the time of testing, equal to or greater than threshold of 1 mg/kg for spot test procedure or 0.02 mg/kg for boiling-water-extraction procedures with a sample surface area of $50cm^2$ used. However, it shall not be interpreted as the Cr(VI) concentration in the coating layer of the sample and should not be used as a method detection limit for this qualitative test.

Negative = A negative test result indicated above positive observation was not found at the time of testing. When the spot-test showed a negative result, the boiling-water-extraction procedure shall be used to verify the result.

(B) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr^{6+})	0.1% (1000 mg/kg)

The above limits were quoted from 2002/95/EC and superseding 2011/65/EU for homogeneous material.

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Test Report Number: SZHH0071861302

Tests Conducted

(C) Test Method:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Lead (Pb) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Mercury (Hg) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Chromium (VI) (Cr^{6+}) Content	With reference to IEC 62321 Edition 1.0:2008, by boiling water extraction and determined by UV-VIS Spectrophotometer	Positive/Negative (Threshold of 0.02mg/kg with $50cm^2$)

Date sample received: Aug 10, 2012
Testing period : Aug 10, 2012 to Aug 13, 2012

****

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7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
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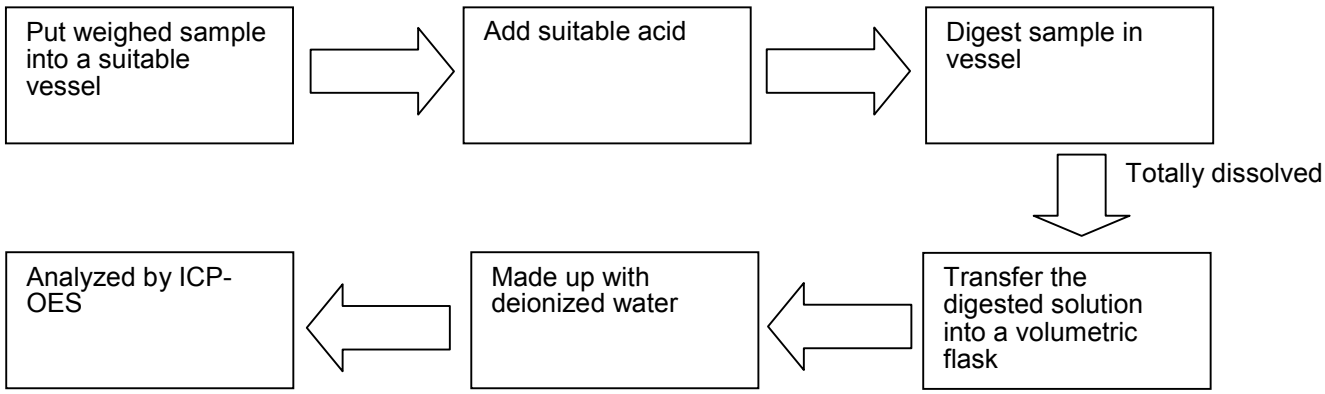
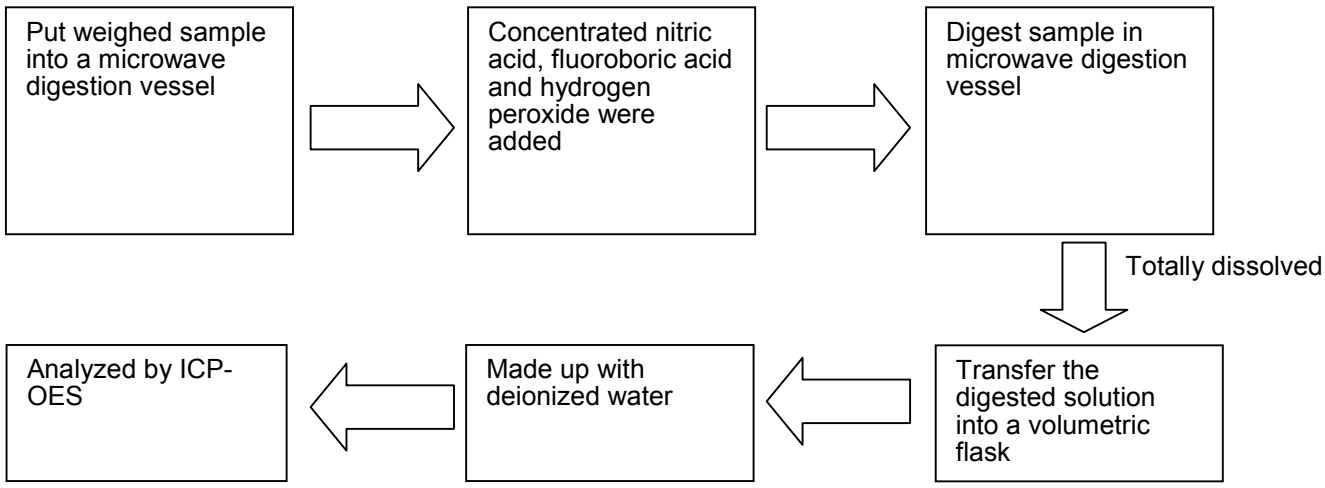
Tests Conducted

(D) Measurement Flowchart:

1. Test for Cd/Pb Contents



2. Test for Hg Content



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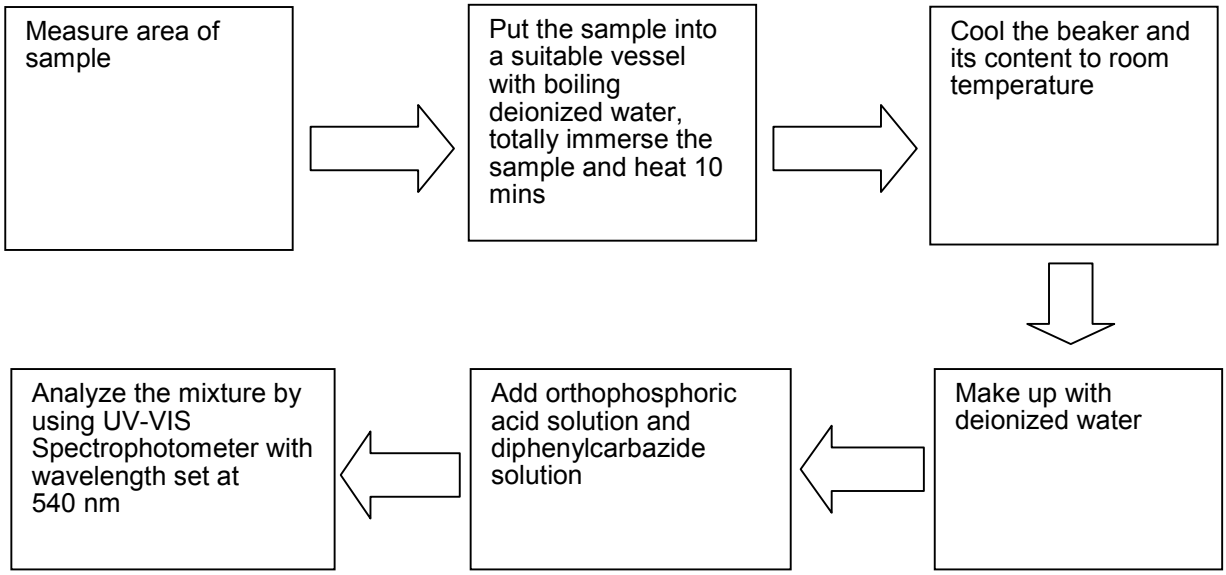
Tests Conducted

3. Test for Chromium (VI) (Cr^{6+}) Content (Boiling Water Extraction)



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End of Report

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7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Test Report Number: SZHH00699669

Applicant: LITTELFUSE, INC
8755 WEST HIGGINS ROAD SUITE
500CHICAGO IL 60631 USA

Date: Jun 20, 2012

Attn: KRISTEEN BACILA/ARSENIO CESISTA JR.

Sample Description:
One (1) submitted sample said to be **red powder (epoxy resin PCE210 4A red).**
Part No. : MS044.

****

Tests conducted:
As requested by the applicant, refer to attached page(s) for details.

****

To be continued

Authorized by:
For Intertek Testing Services
Shenzhen Ltd.

Ben N.L. Lin
General Manager

Intertek Testing Services Shenzhen Ltd.-TFH Division
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Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Test Report Number: SZHH00699669

Conclusion:

Tested Samples	Standard	Result
Submitted sample	Restriction of the use of certain hazardous substance in electrical electronic and equipment (RoHS Direction 2002/95/EC and supersedure 2011/65/EU)	Pass
	Phthalates content requirement in Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & Amendment No. 552/2009 (formerly known as Directive 2005/84/EC) (DEHP, DBP & BBP)	Pass
	Test Item	
	Hexabromocyclododecane Content	See test conducted
	Halogen (F, Cl, Br, I) Content	See test conducted

****

Authorized by:
For Intertek Testing Services
Shenzhen Ltd.

Ben N.L. Lin
General Manager

Intertek Testing Services Shenzhen Ltd.-TFH Division
7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Test Report Number: SZHH00699669

Tests Conducted

1 RoHS Chemical Test

(A) Test Result Summary:

Testing Item	Result
Cadmium (Cd) Content (mg/kg)	ND(<2)
Lead (Pb) Content (mg/kg)	ND(<2)
Mercury (Hg) Content (mg/kg)	ND(<2)
Chromium (VI)(Cr^{6+}) Content (mg/kg)	ND(<1)
Polybrominated Biphenyls (PBBs)(mg/kg)	
Monobromobiphenyl (MonoBB)	ND(<5)
Dibromobiphenyl (DiBB)	ND(<5)
Tribromobiphenyl (TriBB)	ND(<5)
Tetrabromobiphenyl (TetraBB)	ND(<5)
Pentabromobiphenyl (PentaBB)	ND(<5)
Hexabromobiphenyl (HexaBB)	ND(<5)
Heptabromobiphenyl (HeptaBB)	ND(<5)
Octabromobiphenyl (OctaBB)	ND(<5)
Nonabromobiphenyl (NonaBB)	ND(<5)
Decabromobiphenyl (DecaBB)	ND(<5)
Polybrominated Diphenyl Ethers (PBDEs)(mg/kg)	
Monobromodiphenyl Ether (MonoBDE)	ND(<5)
Dibromodiphenyl Ether (DiBDE)	ND(<5)
Tribromodiphenyl Ether (TriBDE)	ND(<5)
Tetrabromodiphenyl Ether (TetraBDE)	ND(<5)
Pentabromodiphenyl Ether (PentaBDE)	ND(<5)
Hexabromodiphenyl Ether (HexaBDE)	ND(<5)
Heptabromodiphenyl Ether (HeptaBDE)	ND(<5)
Octabromodiphenyl Ether (OctaBDE)	ND(<5)
Nonabromodiphenyl Ether (NonaBDE)	ND(<5)
Decabromodiphenyl Ether (DecaBDE)	ND(<5)

Chemist: Wang Haijun/Zeng Guoliang

mg/kg = milligram per kilogram = ppm
< = Less than
ND = Not detected

****

Intertek Testing Services Shenzhen Ltd.-TFH Division
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Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Tests Conducted

(B) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr^{6+})	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

The above limits were quoted from 2002/95/EC and supersedure 2011/65/EU for homogeneous material.

(C) Test Method:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Lead (Pb) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Mercury (Hg) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Chromium (VI)(Cr^{6+}) Content	With reference to IEC 62321 Edition 1.0:2008, by alkaline digestion and determined by UV-VIS Spectrophotometer	1 mg/kg
Polybrominated Biphenyls (PBBs)& Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321 Edition 1.0:2008, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	5 mg/kg

Date sample received: Jun 09, 2012
Testing period: Jun 09, 2012 to Jun 12, 2012

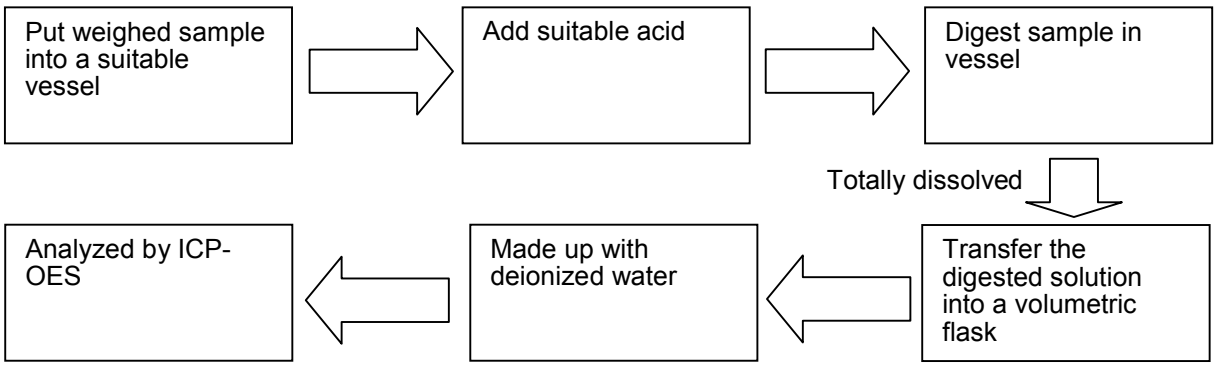
****

Intertek Testing Services Shenzhen Ltd.-TFH Division
7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

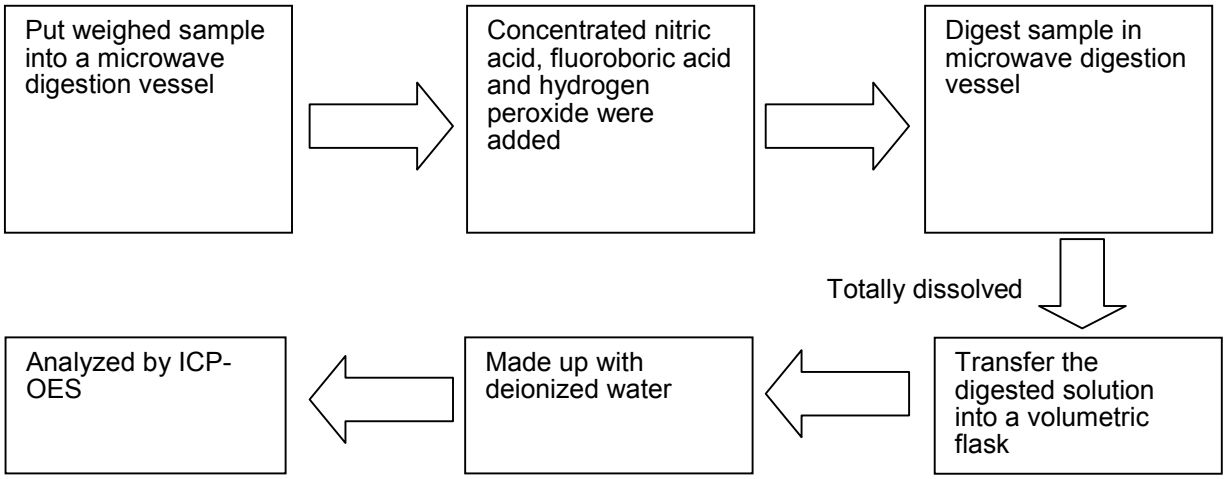
Tests Conducted

(D) Measurement Flowchart:

1. Test for Cd/Pb Contents



2. Test for Hg Content



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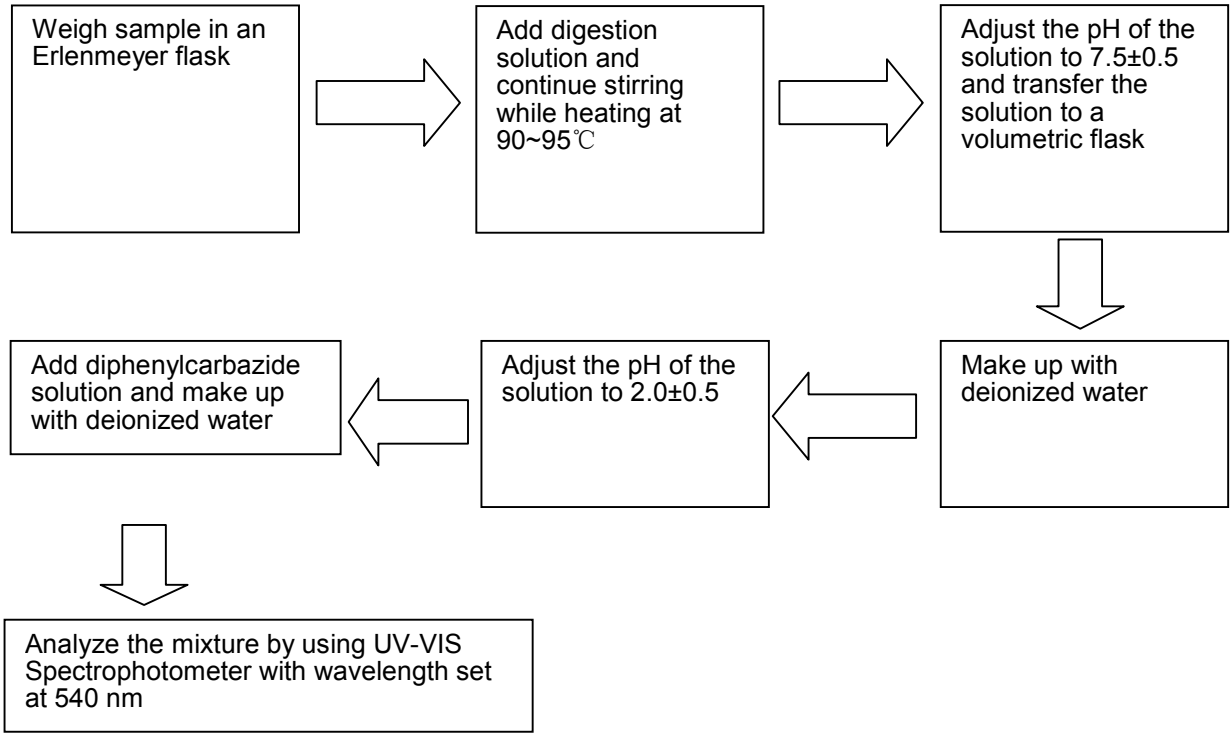
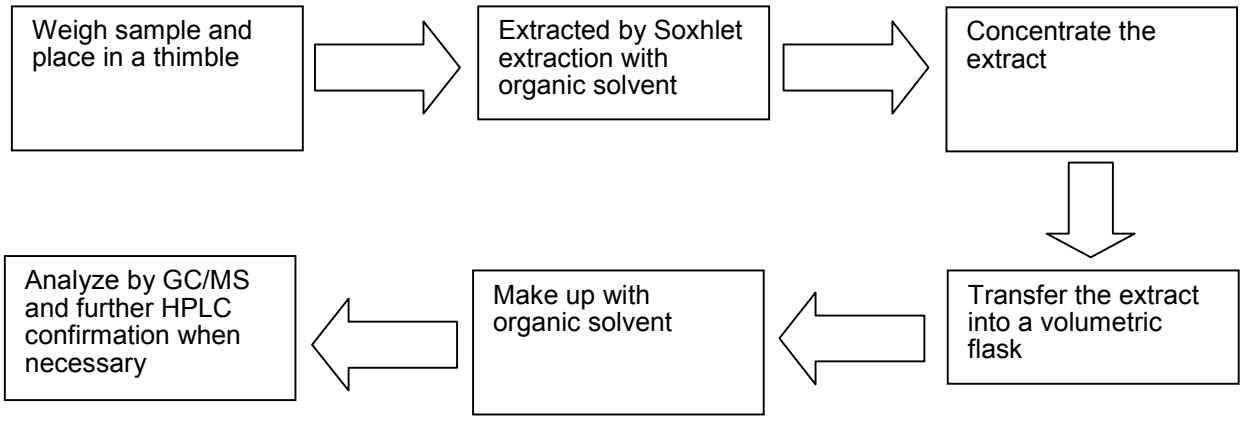
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Tests Conducted

3. Test for Chromium (VI) (Cr^{6+}) Content (Alkaline Digestion)



4. Test for PBBs/PBDEs Contents



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Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Tests Conducted

2 Phthalate Content

With reference to EN14372, by Gas chromatographic-Mass Spectrometric (GC-MS) analysis.

	Result (%)
Dibutyl phthalate (DBP)	<0.01
Di-(2-ethyl hexyl) phthalate (DEHP)	<0.01
Benzyl butyl phthalate (BBP)	<0.01
Sum of three phthalates	<0.01
Limit	0.1 %

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 articles.

< = Less than

As per client's request, only DBP, DEHP and BBP were tested for submitted sample.

Date sample received : Jun 09, 2012
Testing period : Jun 09, 2012 to Jun 14, 2012

3 Hexabromocyclododecane (HBCDD) Content:

By solvent extraction followed by Gas Chromatographic - Mass Spectrometric (GC-MS) analysis.

Result : Less than 10 mg/kg

mg/kg =milligram per kilogram

Date sample received : Jun 09, 2012
Testing period : Jun 09, 2012 to Jun 12, 2012

****

Intertek Testing Services Shenzhen Ltd.-TFH Division
7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Tests Conducted

4 Halogen Content

(Ⅰ) Test Result Summary:

Testing Item	Result (mg/kg)
Fluorine (F) Content	ND
Chlorine (Cl) Content	ND
Bromine (Br) Content	4590
Iodine (I) Content	ND

mg/kg = milligram per kilogram = ppm
ND = Not detected

(Ⅱ) Test Method:

Testing Item	Testing Method	Reporting Limit
Halogen (F, Cl, Br, I) Content	With reference to BS EN 14582:2007, by calorimetric bomb and determined by Ion Chromatography	50 mg/kg

Reporting limit = Quantitation limit of analyte in sample

Date sample received : Jun 09, 2012
Testing period : Jun 09, 2012 to Jun 18, 2012

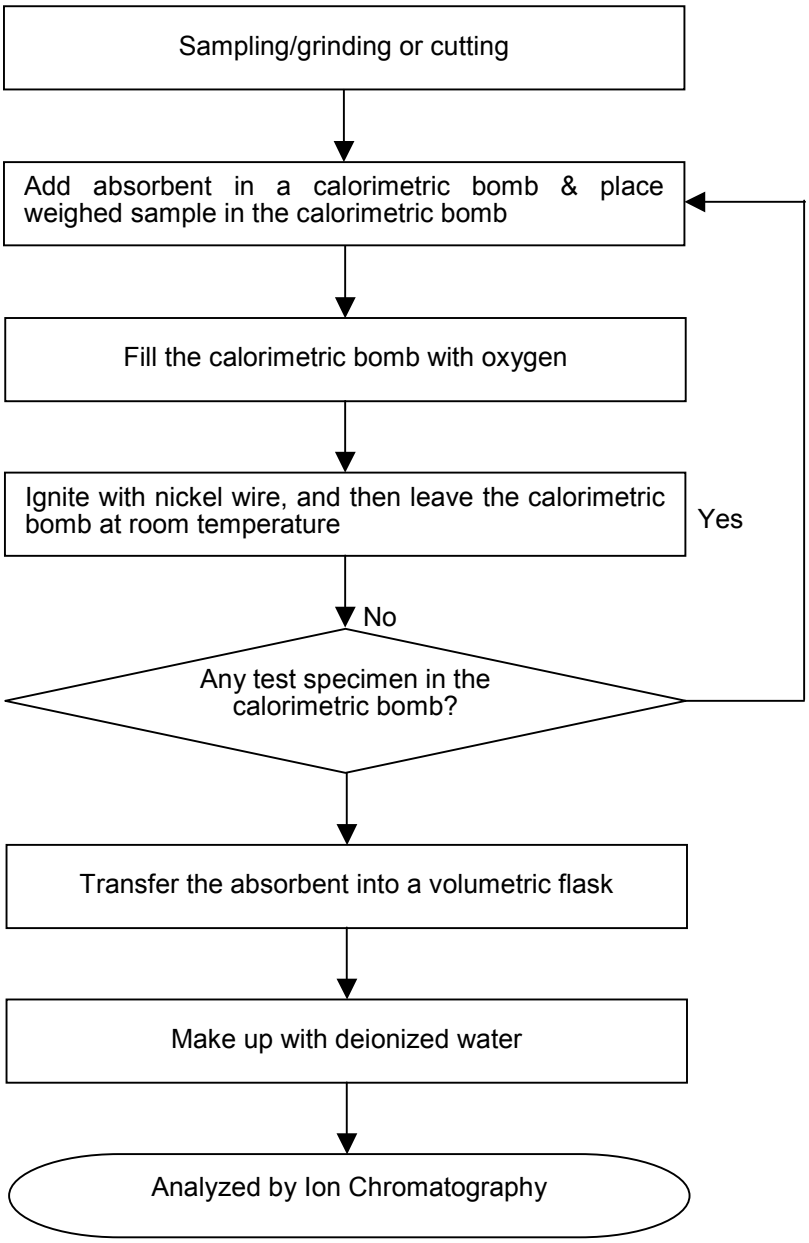
****

Intertek Testing Services Shenzhen Ltd.-TFH Division
7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Tests Conducted

(III) Measurement Flowchart:

Test for Halogen Content (Reference Method: BS EN 14582:2007)



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End of report

Intertek Testing Services Shenzhen Ltd.-TFH Division
7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Test Report Number: SZHH0071859101

Applicant: LITTELFUSE, INC
8755 WEST HIGGINS ROAD SUITE
500CHICAGO IL 60631 USA

Date: Aug 16, 2012

Attn: KRISTEEN BACILA/ARSENIO CESISTA JR.

Sample Description:
One (1) submitted sample said to be **dark grey resin coating (industrial coating resin).**

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Tests conducted:
As requested by the applicant, refer to attached page(s) for details.

****

Conclusion:

Tested Sample	Standard	Result
Submitted sample	Restriction of the use of certain hazardous substance in electrical and electronic equipment (RoHS Directive 2002/95/EC and superseding 2011/65/EU)	See test conducted
	Phthalates content requirement in Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & Amendment No. 552/2009 (formerly known as Directive 2005/84/EC) (DEHP, DBP & BBP)	Pass
	Test Item	
	Hexabromocyclododecane Content	See test conducted
	Halogen (F, Cl, Br, I) Content	See test conducted

****

Authorized by:
For Intertek Testing Services
Shenzhen Ltd.

Ben N.L. Lin
General Manager

Intertek Testing Services Shenzhen Ltd.-TFH Division
7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Test Report Number: SZHH0071859101

Tests Conducted

1 RoHS Chemical Test

(A) Test Result Summary:

Testing Item	Result
Cadmium (Cd) Content (mg/kg)	ND(<2)
Lead (Pb) Content (mg/kg)	ND(<2)
Mercury (Hg) Content (mg/kg)	ND(<2)
Chromium (VI)(Cr^{6+}) Content (mg/kg)	ND(<1)
Polybrominated Biphenyls (PBBs)(mg/kg)	
Monobromobiphenyl (MonoBB)	ND(<5)
Dibromobiphenyl (DiBB)	ND(<5)
Tribromobiphenyl (TriBB)	ND(<5)
Tetrabromobiphenyl (TetraBB)	ND(<5)
Pentabromobiphenyl (PentaBB)	ND(<5)
Hexabromobiphenyl (HexaBB)	ND(<5)
Heptabromobiphenyl (HeptaBB)	ND(<5)
Octabromobiphenyl (OctaBB)	ND(<5)
Nonabromobiphenyl (NonaBB)	ND(<5)
Decabromobiphenyl (DecaBB)	ND(<5)
Polybrominated Diphenyl Ethers (PBDEs)(mg/kg)	
Monobromodiphenyl Ether (MonoBDE)	ND(<5)
Dibromodiphenyl Ether (DiBDE)	ND(<5)
Tribromodiphenyl Ether (TriBDE)	ND(<5)
Tetrabromodiphenyl Ether (TetraBDE)	ND(<5)
Pentabromodiphenyl Ether (PentaBDE)	ND(<5)
Hexabromodiphenyl Ether (HexaBDE)	ND(<5)
Heptabromodiphenyl Ether (HeptaBDE)	ND(<5)
Octabromodiphenyl Ether (OctaBDE)	ND(<5)
Nonabromodiphenyl Ether (NonaBDE)	ND(<5)
Decabromodiphenyl Ether (DecaBDE)	ND(<5)

Chemist: Wang Haijun/Zeng Guoliang

mg/kg = milligram per kilogram = ppm
< = Less than
ND = Not detected

****

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Tests Conducted

(B) RoHS Requirement:

Restricted Substances	**Limits**
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr^{6+})	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

The above limits were quoted from 2002/95/EC and superseding 2011/65/EU for homogeneous material.

(C) Test Method:

Testing Item	**Testing Method**	**Reporting Limit**
Cadmium (Cd) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Lead (Pb) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Mercury (Hg) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Chromium (VI)(Cr^{6+}) Content	With reference to IEC 62321 Edition 1.0:2008, by alkaline digestion and determined by UV-VIS Spectrophotometer	1 mg/kg
Polybrominated Biphenyls (PBBs)& Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321 Edition 1.0:2008, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	5 mg/kg

Date sample received: Aug 10, 2012
Testing period: Aug 10, 2012 to Aug 13, 2012
****

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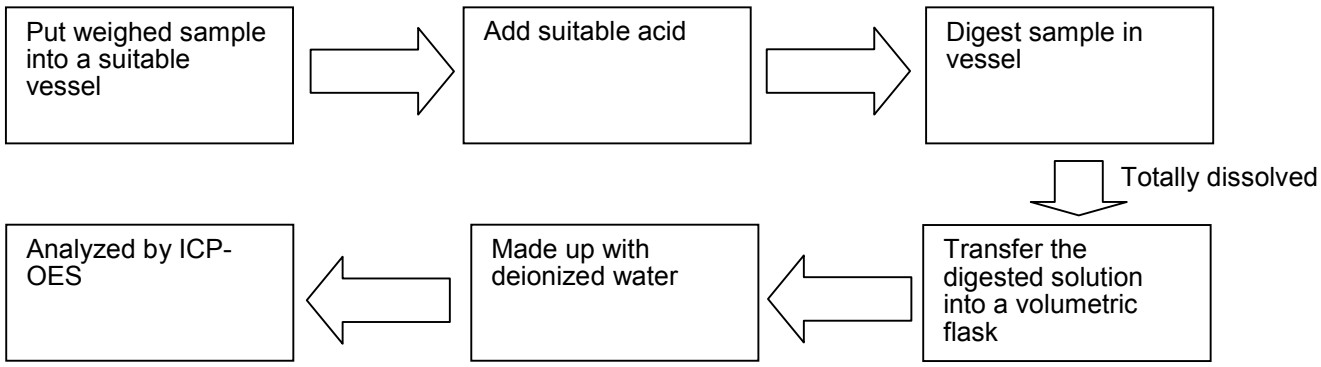
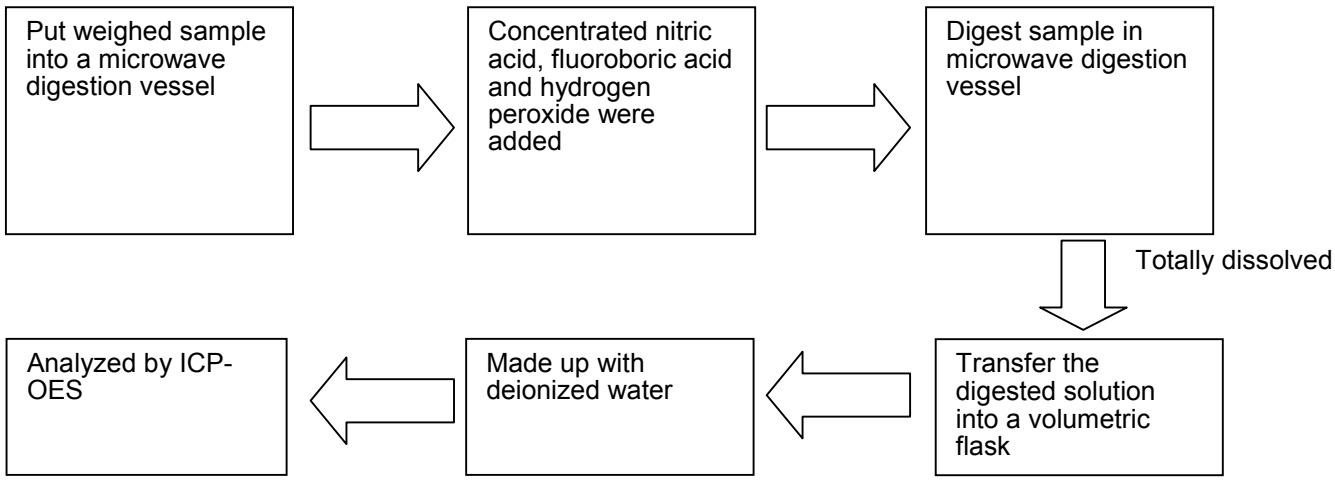
Tests Conducted

(D) Measurement Flowchart:

1. Test for Cd/Pb Contents



2. Test for Hg Content



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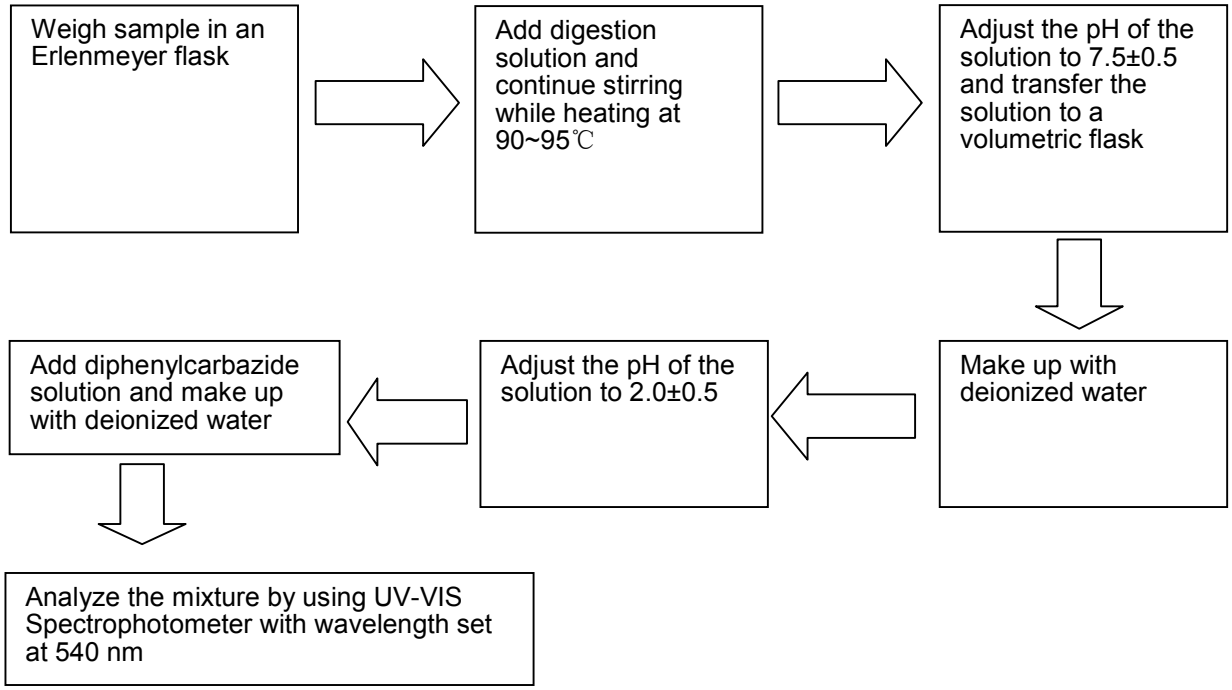
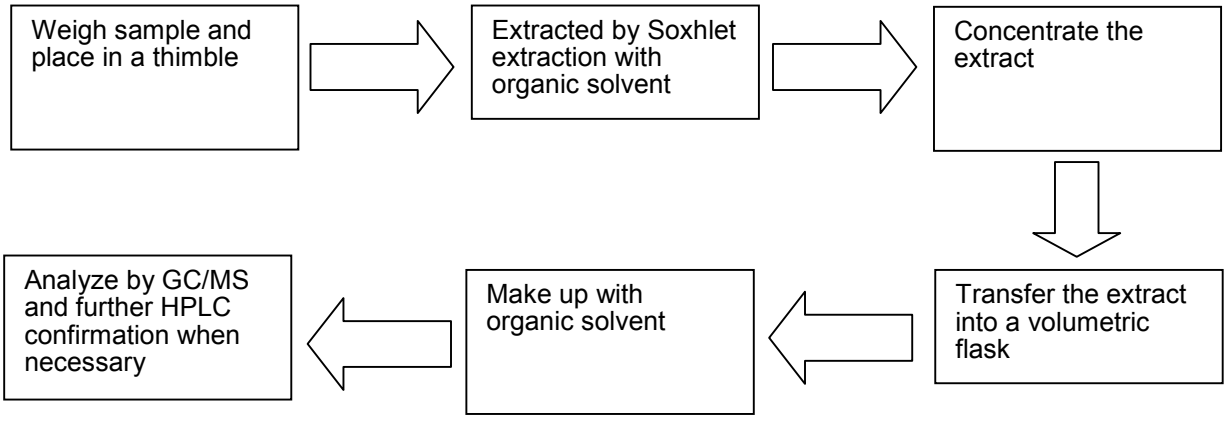
Tests Conducted

3. Test for Chromium (VI) (Cr^{6+}) Content (Alkaline Digestion)



4. Test for PBBs/PBDEs Contents



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Tests Conducted

2 Phthalate Content

With reference to EN14372, by Gas chromatographic-Mass Spectrometric (GC-MS) analysis.

	Result (%)
Dibutyl phthalate (DBP)	<0.01
Di-(2-ethyl hexyl) phthalate (DEHP)	<0.01
Benzyl butyl phthalate (BBP)	<0.01
Sum of three phthalates	<0.01
Limit	0.1 %

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 articles.

< = Less than

Date sample received :Aug 10, 2012
Testing period :Aug 10, 2012 to Aug 15, 2012

3 Hexabromocyclododecane (HBCDD) Content:

By solvent extraction followed by Gas Chromatographic - Mass Spectrometric (GC-MS) analysis.

Result : Less than 10 mg/kg

mg/kg =milligram per kilogram

Date sample received: Aug 10, 2012
Testing period: Aug 10, 2012 to Aug 14, 2012

****

Intertek Testing Services Shenzhen Ltd.-TFH Division
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Tests Conducted

4 Halogen Content

(Ⅰ) Test Result Summary:

Testing Item	Result (mg/kg)
Fluorine (F) Content	ND
Chlorine (Cl) Content	ND
Bromine (Br) Content	ND
Iodine (I) Content	ND

mg/kg= milligram per kilogram = ppm
ND= Not detected

(Ⅱ) Test Method:

Testing Item	Testing Method	Reporting Limit
Halogen (F, Cl, Br, I) Content	With reference to BS EN 14582:2007, by calorimetric bomb and determined by Ion Chromatography	50 mg/kg

Reporting limit = Quantitation limit of analyte in sample

Date sample received :Aug 10, 2012
Testing period :Aug 10, 2012 to Aug 14, 2012

****

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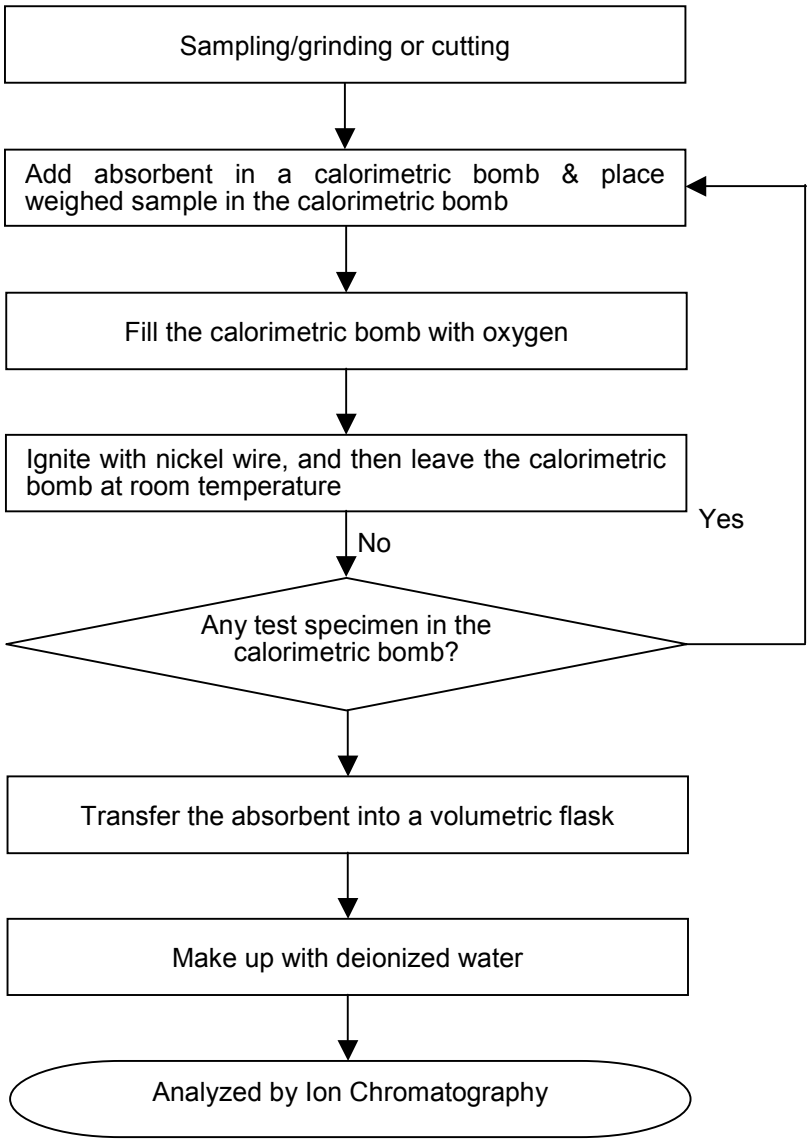
Tests Conducted

(III) Measurement Flowchart:

Test for Halogen Content (Reference Method: BS EN 14582:2007)



****

End of report

Intertek Testing Services Shenzhen Ltd.-TFH Division
7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Test Report Number: SZHH00651966

Applicant: LITTELFUSE, INC
8755 WEST HIGGINS ROAD SUITE
500CHICAGO IL 60631 USA

Date: Dec 15, 2011

Attn: KRISTEEN BACILA/ARSENIO CESISTA JR.

Sample Description:
One (1) submitted sample said to be **base & lid.**
Tested components:
(1) red plastic. (base)
(2) red plastic. (lid)

****

Tests conducted:
As requested by the applicant, refer to attached page(s) for details.

****

To be continued

Authorized by:
For Intertek Testing Services
Shenzhen Ltd.

Ben N.L. Lin
General Manager

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Test Report Number: SZHH00651966

Conclusion:

Tested Sample	Standard	Result
Submitted sample	Phthalates content requirement in Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & Amendment No. 552/2009 (formerly known as Directive 2005/84/EC) (DEHP, DBP & BBP)	Pass
	Test Item	
	Hexabromocyclododecane Content	See Test Conducted
	Halogen Content	See Test Conducted
	Restriction of the use of certain hazardous substance in electrical electronic and equipment (RoHS Direction 2002/95/EC and amendment 2005/618/EC)	See Test Conducted

****

Remark As requested by the applicant, tested components (1) and (2) were tested together.

****

Authorized by:
For Intertek Testing Services
Shenzhen Ltd.

Ben N.L. Lin
General Manager

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Test Report Number: SZHH00651966

Tests Conducted

1 RoHS Chemical Test

(A) Test Result Summary:

Testing Item	Result
	(1/2)
Cadmium (Cd) Content (mg/kg)	ND(<2)
Lead (Pb) Content (mg/kg)	47
Mercury (Hg) Content (mg/kg)	ND(<2)
Chromium (VI)(Cr^{6+}) Content (mg/kg)	ND(<1)
Polybrominated Biphenyls (PBBs)(mg/kg)	
Monobromobiphenyl (MonoBB)	ND(<5)
Dibromobiphenyl (DiBB)	ND(<5)
Tribromobiphenyl (TriBB)	ND(<5)
Tetrabromobiphenyl (TetraBB)	ND(<5)
Pentabromobiphenyl (PentaBB)	ND(<5)
Hexabromobiphenyl (HexaBB)	ND(<5)
Heptabromobiphenyl (HeptaBB)	ND(<5)
Octabromobiphenyl (OctaBB)	ND(<5)
Nonabromobiphenyl (NonaBB)	ND(<5)
Decabromobiphenyl (DecaBB)	ND(<5)
Polybrominated Diphenyl Ethers (PBDEs)(mg/kg)	
Monobromodiphenyl Ether (MonoBDE)	ND(<5)
Dibromodiphenyl Ether (DiBDE)	ND(<5)
Tribromodiphenyl Ether (TriBDE)	ND(<5)
Tetrabromodiphenyl Ether (TetraBDE)	ND(<5)
Pentabromodiphenyl Ether (PentaBDE)	ND(<5)
Hexabromodiphenyl Ether (HexaBDE)	ND(<5)
Heptabromodiphenyl Ether (HeptaBDE)	ND(<5)
Octabromodiphenyl Ether (OctaBDE)	ND(<5)
Nonabromodiphenyl Ether (NonaBDE)	ND(<5)
Decabromodiphenyl Ether (DecaBDE)	ND(<5)

Chemist: Wang Haijun/Zeng Guoliang

mg/kg = milligram per kilogram = ppm
< = Less than
ND = Not detected

Tested components:

(1) Red plastic (based of mark as #1).
(2) Red plastic (lid of mark as #1).

****

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Test Report Number: SZHH00651966

Tests Conducted

(B) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr^{6+})	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

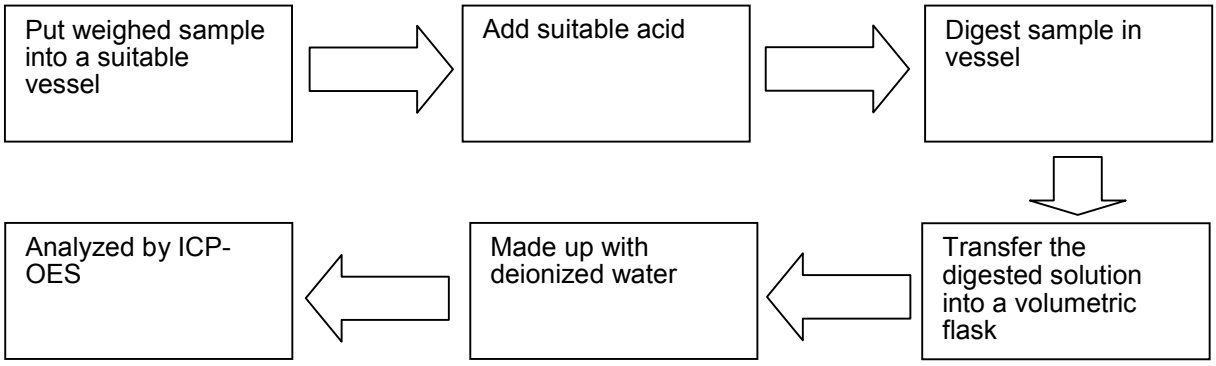
The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

(C)Test Method:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Lead (Pb) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Mercury (Hg) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Chromium (VI)(Cr^{6+}) Content	With reference to IEC 62321 Edition 1.0:2008, by alkaline digestion and determined by UV-VIS Spectrophotometer	1 mg/kg
Polybrominated Biphenyls (PBBs)& Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321 Edition 1.0:2008, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	5 mg/kg

Date sample received: Dec 08, 2011
Testing period: Dec 08, 2011 to Dec 13, 2011

(D) Measurement Flowchart:
1. Test for Cd/Pb Contents



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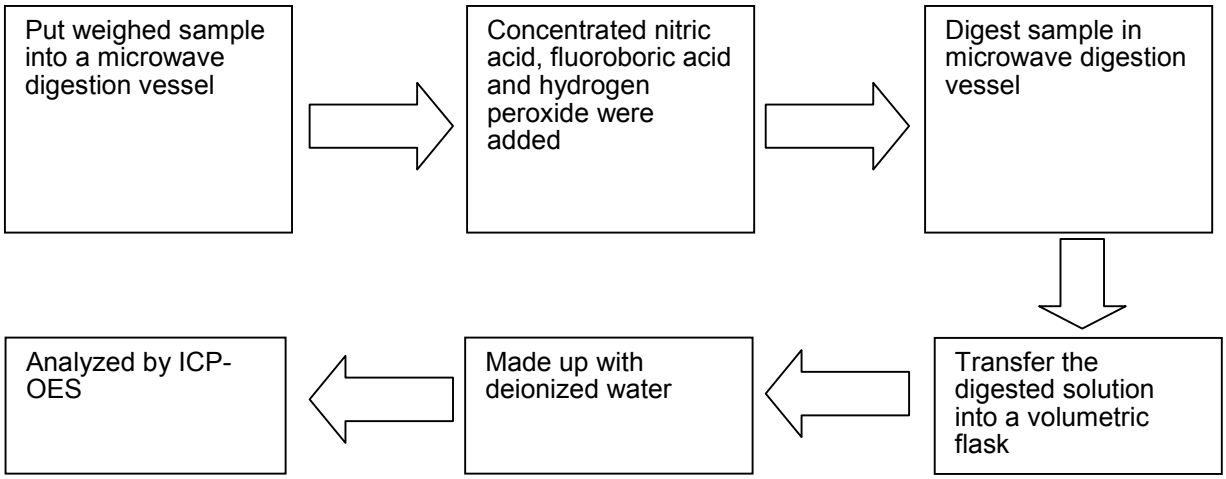
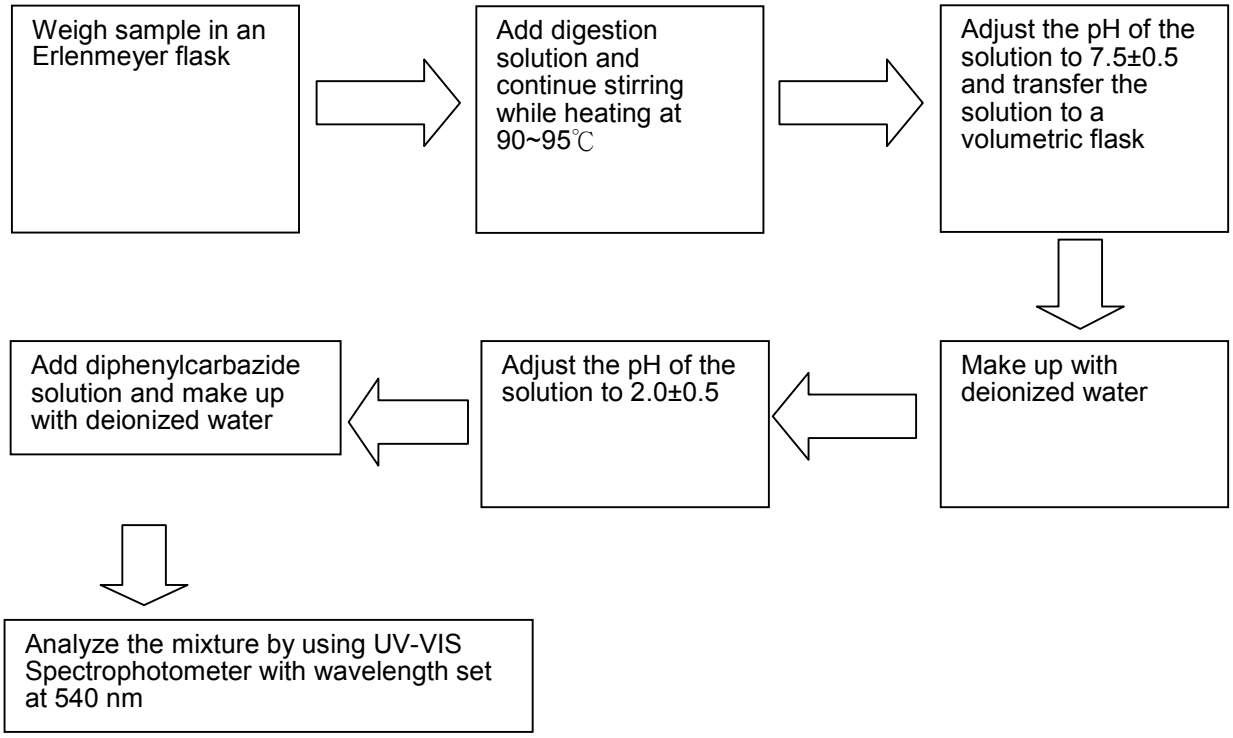
Tests Conducted

2. Test for Hg Content



3. Test for Chromium (VI) (Cr^{6+}) Content (Alkaline Digestion)



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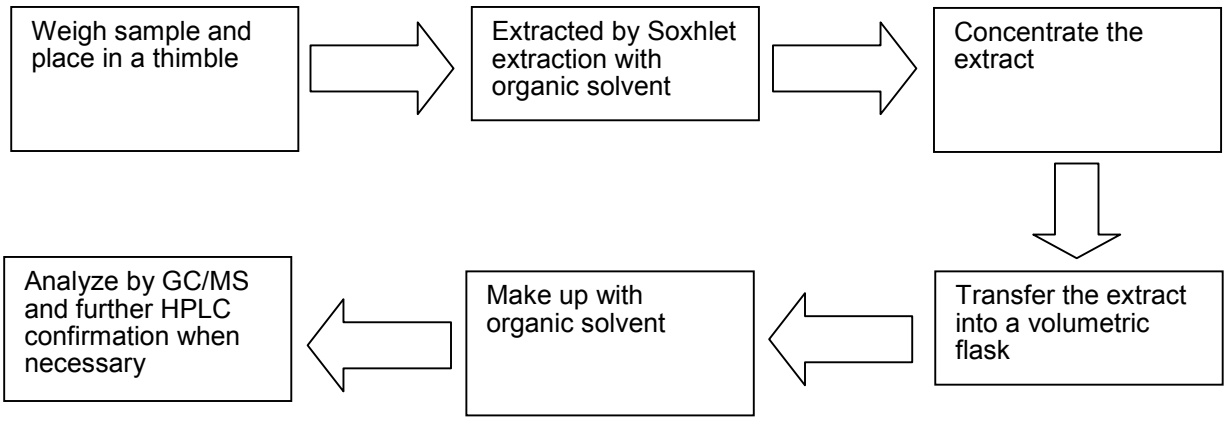
Tests Conducted

4. Test for PBBs/PBDEs Contents



2 Halogen Content

(Ⅰ) Test Result Summary:

Testing Item	Result (mg/kg)
	(1/2)
Fluorine (F) Content	597
Chlorine (Cl) Content	ND
Bromine (Br) Content	41600
Iodine (I) Content	ND

mg/kg= milligram per kilogram = ppm
ND= Not detected

Remark: As requested by the applicant, tested components (1) and (2) were tested together.

(Ⅱ) Test Method:

Testing Item	Testing Method	Reporting Limit
Halogen (F, Cl, Br, I) Content	With reference to BS EN 14582:2007, by calorimetric bomb and determined by Ion Chromatography	50 mg/kg

Reporting limit = Quantitation limit of analyte in sample

Date sample received: Dec 08, 2011
Testing period: Dec 08, 2011 to Dec 14, 2011

****

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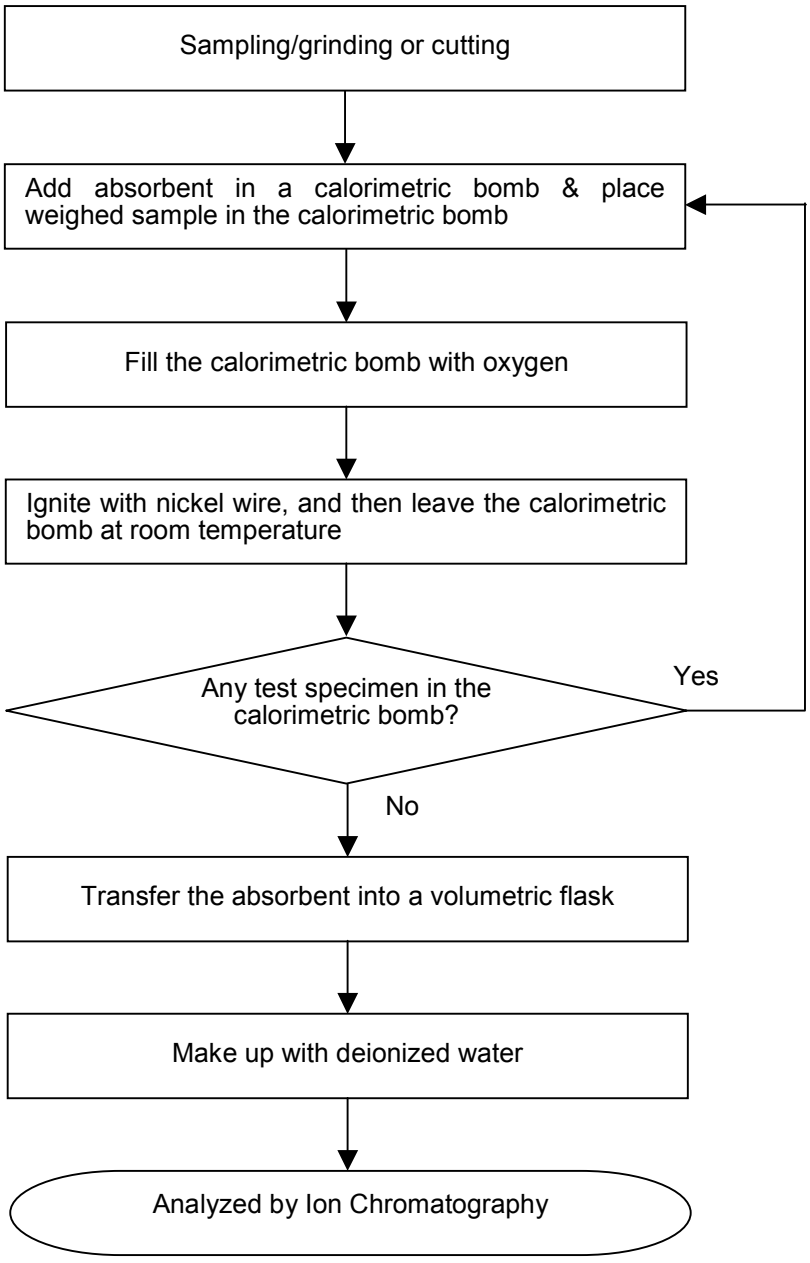
Tests Conducted

(Ⅲ) Measurement Flowchart:

Test for Halogen Content (Reference Method: BS EN 14582:2007)



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Tests Conducted

3 Phthalate Content

With reference to EN14372, by Gas chromatographic-Mass Spectrometric (GC-MS) analysis.

	Result (%) (1/2)
Dibutyl phthalate (DBP)	<0.01
Di-(2-ethyl hexyl) phthalate (DEHP)	<0.01
Benzyl butyl phthalate (BBP)	<0.01
Sum of three phthalates	<0.01
Limit	0.1 %

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 articles.

< = Less than

As per client's request, only DBP, DEHP and BBP were tested for the components (1) to (2) of the submitted sample.

Tested components:

(1) Red plastic (based of mark as #1).
(2) Red plastic (lid of mark as #1).

Date sample received : Dec 08, 2011
Testing period : Dec 08, 2011 to Dec 12, 2011

4 Hexabromocyclododecane (HBCDD) Content:

By solvent extraction followed by Gas Chromatographic - Mass Spectrometric (GC-MS) analysis.

Tested Sample (1/2)	Result (mg/kg)
	<10

< = Less than
mg/kg =milligram per kilogram

Tested components:

(1) Red plastic (based of mark as #1).
(2) Red plastic (lid of mark as #1).

Date sample received: Dec 08, 2011
Testing period: Dec 08, 2011 to Dec 10, 2011

****

End of report

Intertek Testing Services Shenzhen Ltd.-TFH Division
7/F., ShekouTechnology Main Building, Industrial 7th Road,Shekou,Shenzhen, China
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

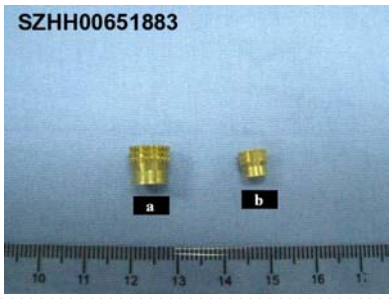
Test Report Number: SZHH00651883

Applicant: LITTELFUSE, INC
8755 WEST HIGGINS ROAD SUITE
500CHICAGO IL 60631 USA

Date: Dec 13, 2011

Attn: KRISTEEN BACILA/ARSENIO CESISTA JR.

Sample Description:
One (1) submitted sample said to be **copper screw.**
Tested components:
(a) copper color metal. (big)
(b) copper color metal. (small)



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Tests conducted:
As requested by the applicant, refer to attached page(s) for details.
****

Remark : As requested by the applicant, tested components (a) and (b) were tested together.
****

Authorized by:
For Intertek Testing Services
Shenzhen Ltd.

Ben N.L. Lin
General Manager

Intertek Testing Services Shenzhen Ltd.-TFH Division
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Test Report Number: SZHH00651883

Tests Conducted

RoHS Chemical Test

(A) Test Result Summary:

Testing Item	Result (a/b)
Cadmium (Cd) Content (mg/kg)	35
Lead (Pb) Content (mg/kg)	27600
Mercury (Hg) Content (mg/kg)	ND(<2)
Chromium (VI)(Cr^{6+}) Result (By Boiling Water Extraction on Metal)(mg/kg with $50cm^2$)	Negative (<0.02)

Chemist: Wang Haijun

mg/kg = milligram per kilogram = ppm
mg/kg with $50cm^2$ = milligram per kilogram with 50 square centimetre
< = Less than
ND = Not detected

Positive = A positive test result indicated the presence of Cr(VI) at the time of testing, equal to or greater than threshold of 1 mg/kg for spot test procedure or 0.02 mg/kg for boiling-water-extraction procedures with a sample surface area of $50cm^2$ used. However, it shall not be interpreted as the Cr(VI) concentration in the coating layer of the sample and should not be used as a method detection limit for this qualitative test.

Negative = A negative test result indicated above positive observation was not found at the time of testing. When the spot-test showed a negative result, the boiling-water-extraction procedure shall be used to verify the result.

(B) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr^{6+})	0.1% (1000 mg/kg)

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

****

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Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Test Report Number: SZHH00651883

Tests Conducted

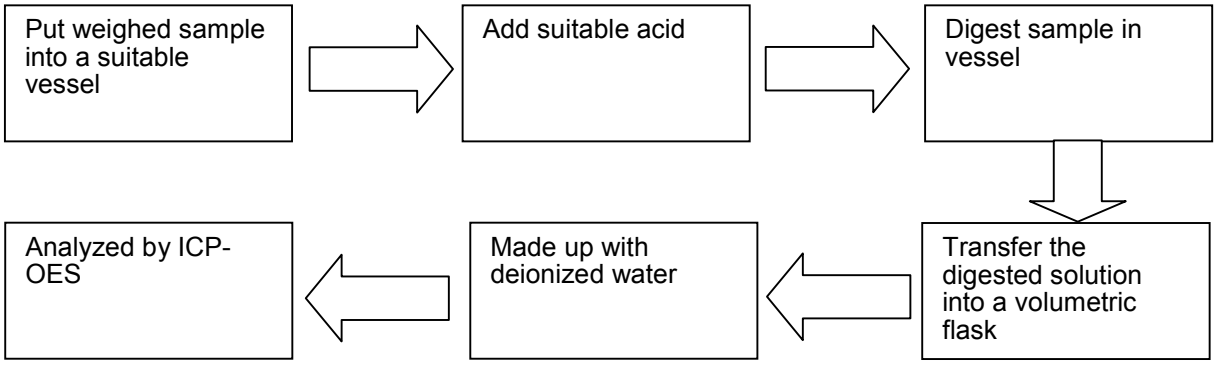
(C) Test Method:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Lead (Pb) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Mercury (Hg) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Chromium (VI) (Cr^{6+}) Content	With reference to IEC 62321 Edition 1.0:2008, by boiling water extraction and determined by UV-VIS Spectrophotometer	Positive/Negative (Threshold of 0.02mg/kg with 50cm^2)

Date sample received : Dec 08, 2011
Testing period : Dec 08, 2011 to Dec 10, 2011

(D) Measurement Flowchart:

1. Test for Cd/Pb Contents



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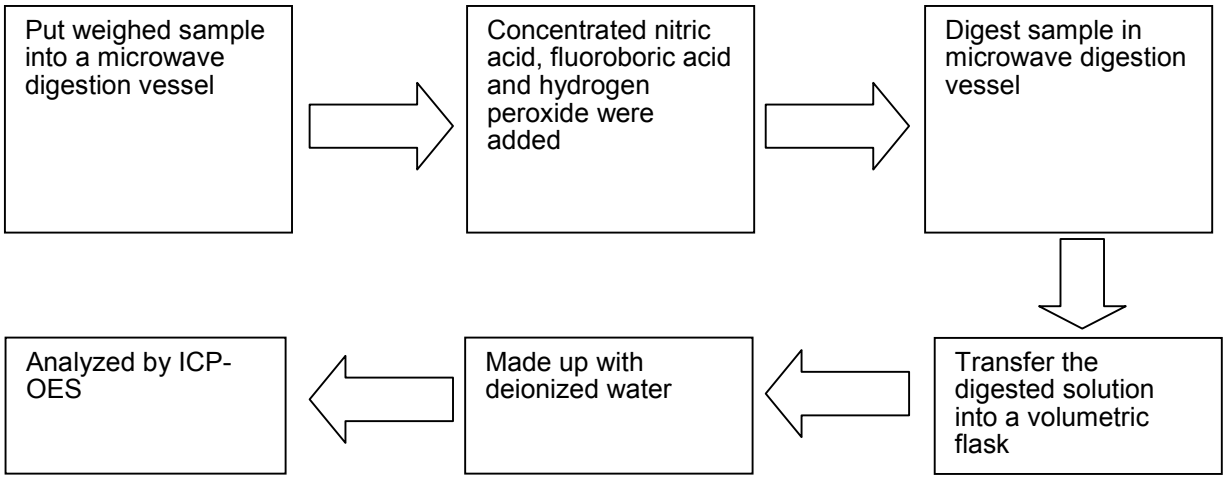
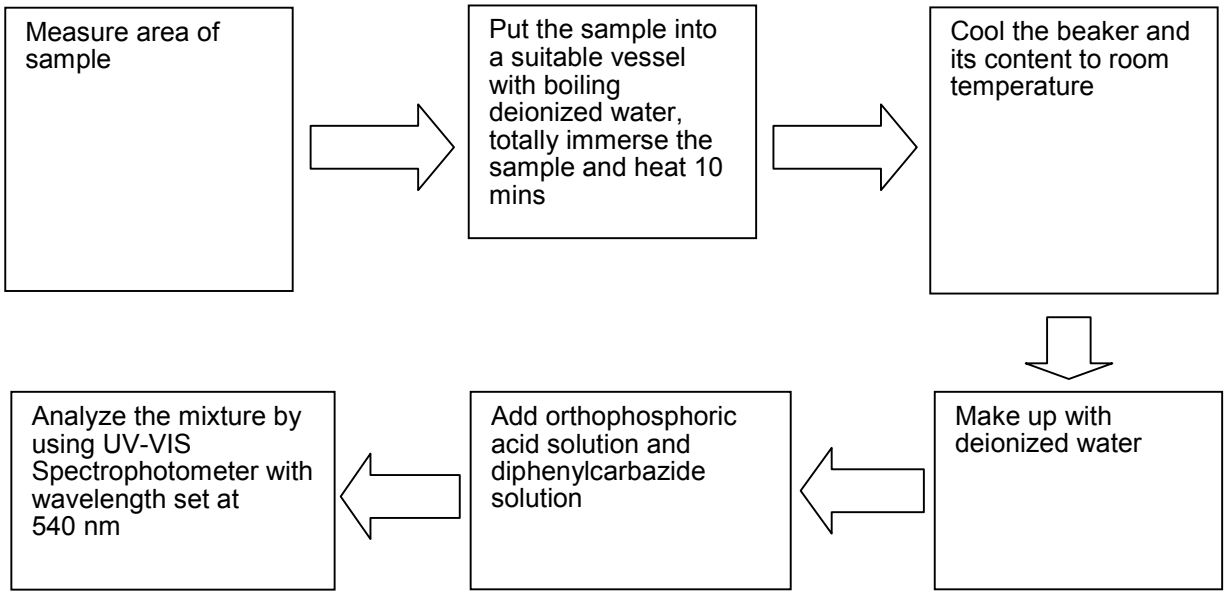
Test Report Number: SZHH00651883

Tests Conducted

2. Test for Hg Content



3. Test for Chromium (VI) (Cr^{6+}) Content (Boiling Water Extraction)



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End of report

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Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067

Test Report Number: SZHH00651901

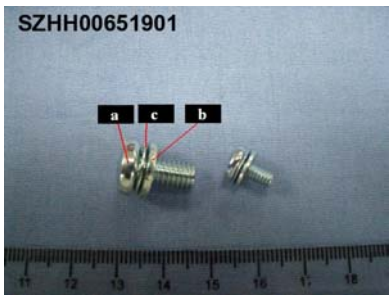
Applicant: LITTELFUSE, INC
8755 WEST HIGGINS ROAD SUITE
500CHICAGO IL 60631 USA

Date: Dec 13, 2011

Attn: KRISTEEN BACILA/ARSENIO CESISTA JR.

Sample Description:

One (1) submitted sample said to be **screw & washer.**
Tested components:
(a) silver color metal. (screw)
(b) silver color metal. (big washer)
(c) silver color metal. (small washer)



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Tests conducted:

As requested by the applicant, refer to attached page(s) for details.

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Remark: As requested by the applicant, tested components (a), (b) and (c)were tested together.

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Authorized by:
For Intertek Testing Services
Shenzhen Ltd.

Ben N.L. Lin
General Manager

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Test Report Number: SZHH00651901

Tests Conducted

RoHS Chemical Test

(A) Test Result Summary:

Testing Item	Result
	(a/b/c)
Cadmium (Cd) Content (mg/kg)	ND(<2)
Lead (Pb) Content (mg/kg)	ND(<2)
Mercury (Hg) Content (mg/kg)	ND(<2)
Chromium (VI)(Cr^{6+}) Result (By Boiling Water Extraction on Metal)(mg/kg with $50cm^2$)	Negative(<0.02)

Chemist: Wang Haijun

mg/kg = milligram per kilogram = ppm
mg/kg with $50cm^2$ = milligram per kilogram with 50 square centimetre
< = Less than
ND = Not detected

Positive = A positive test result indicated the presence of Cr(VI) at the time of testing, equal to or greater than threshold of 1 mg/kg for spot test procedure or 0.02 mg/kg for boiling-water-extraction procedures with a sample surface area of $50cm^2$ used. However, it shall not be interpreted as the Cr(VI) concentration in the coating layer of the sample and should not be used as a method detection limit for this qualitative test.

Negative = A negative test result indicated above positive observation was not found at the time of testing. When the spot-test showed a negative result, the boiling-water-extraction procedure shall be used to verify the result.

(B) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr^{6+})	0.1% (1000 mg/kg)

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

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Test Report Number: SZHH00651901

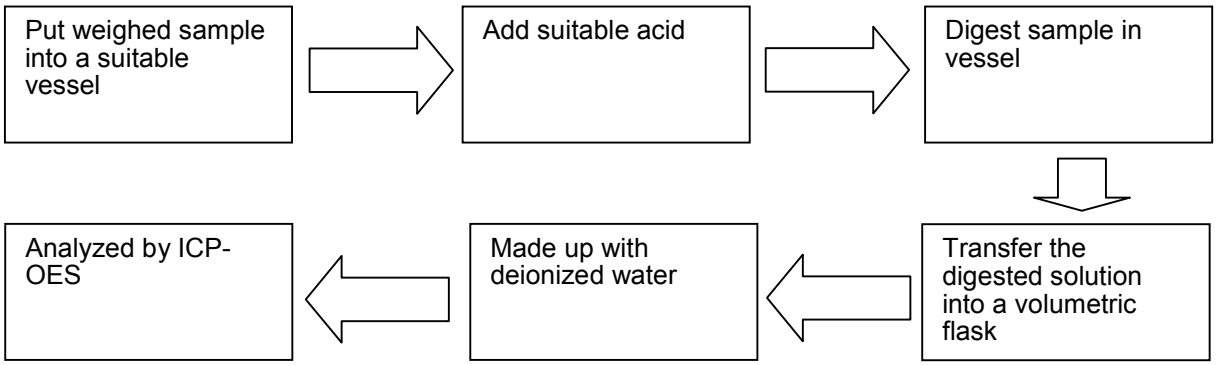
Tests Conducted

(C) Test Method:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Lead (Pb) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Mercury (Hg) Content	With reference to IEC 62321 Edition 1.0:2008, by acid digestion and determined by ICP - OES	2 mg/kg
Chromium (VI) (Cr^{6+}) Content	With reference to IEC 62321 Edition 1.0:2008, by boiling water extraction and determined by UV-VIS Spectrophotometer	Positive/Negative (Threshold of 0.02mg/kg with 50cm^2)

Date sample received: Dec 08, 2011
Testing period: Dec 08, 2011 to Dec 10, 2011

(D) Measurement Flowchart:
1. Test for Cd/Pb Contents



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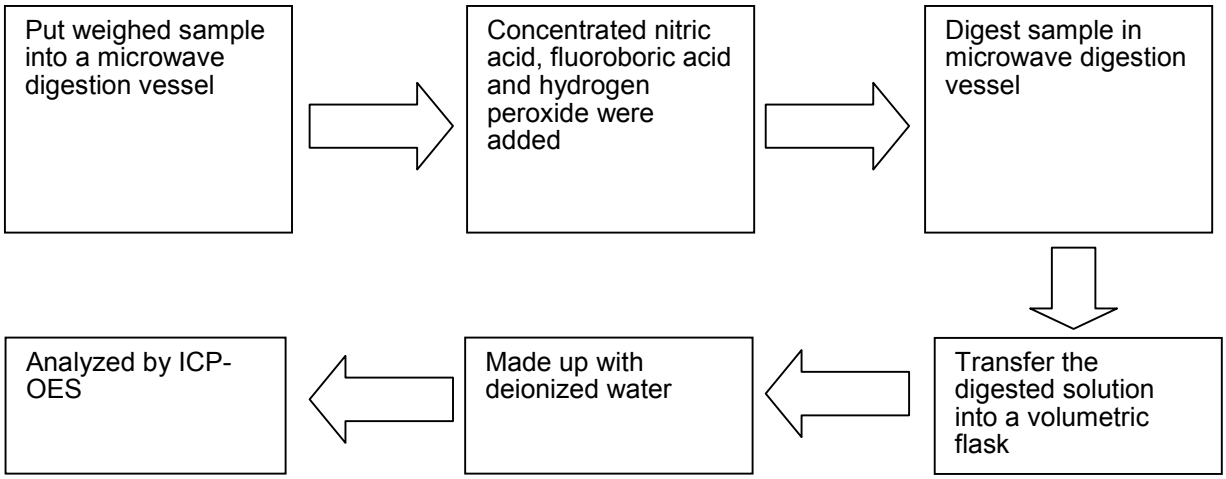
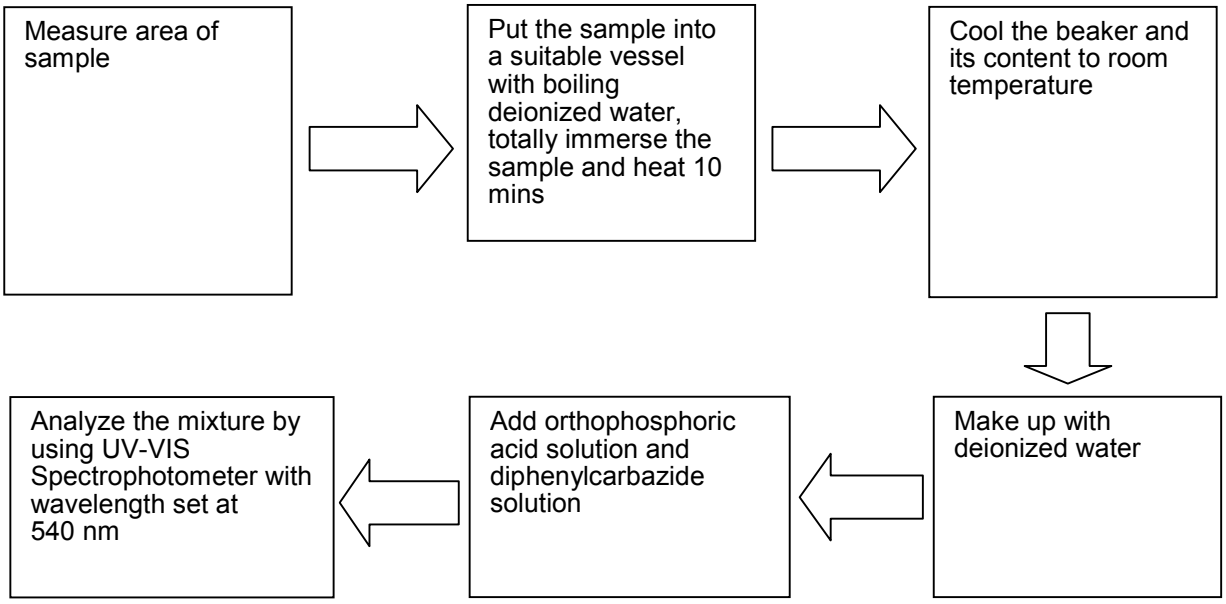
Test Report Number: SZHH00651901

Tests Conducted

2. Test for Hg Content



3. Test for Chromium (VI) (Cr^{6+}) Content (Boiling Water Extraction)



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End of report

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