ICP Test Report Certification Packet

Company Name: Littelfuse, Inc.

Product Type: Metal Oxide Varistors

Product Series: MA Series RoHS models

Issue Date: June 21, 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 MA 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 :

Table 1: List of Raw Materials covered by this report

Total Parts	P/N	Raw Material Description	Page
1	N/A	Black Disc, type DM	3-7
2	MS045	Silver Epoxy	8-14
3	N/A	Wire Lead	15-18
4	MS050	Black Epoxy	19-25

Test Report Number: SZHH00699643

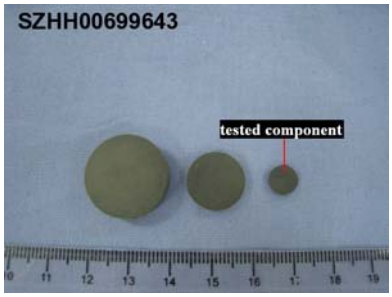
Applicant: LITTELFUSE, INC
8755 WEST HIGGINS ROAD SUITE
500CHICAGO IL 60631 USA

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
Attention is drawn to the terms and conditions printed overleaf.

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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Attention is drawn to the terms and conditions printed overleaf.

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.

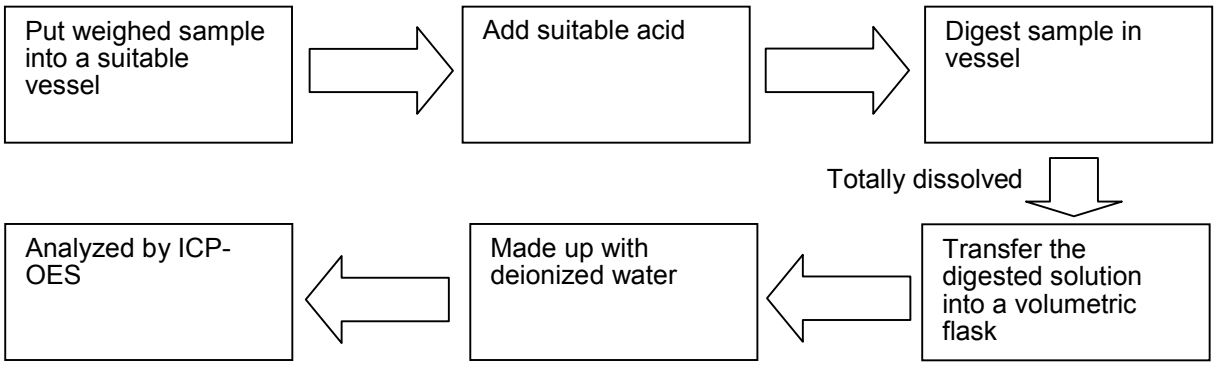
(C) Test Method:

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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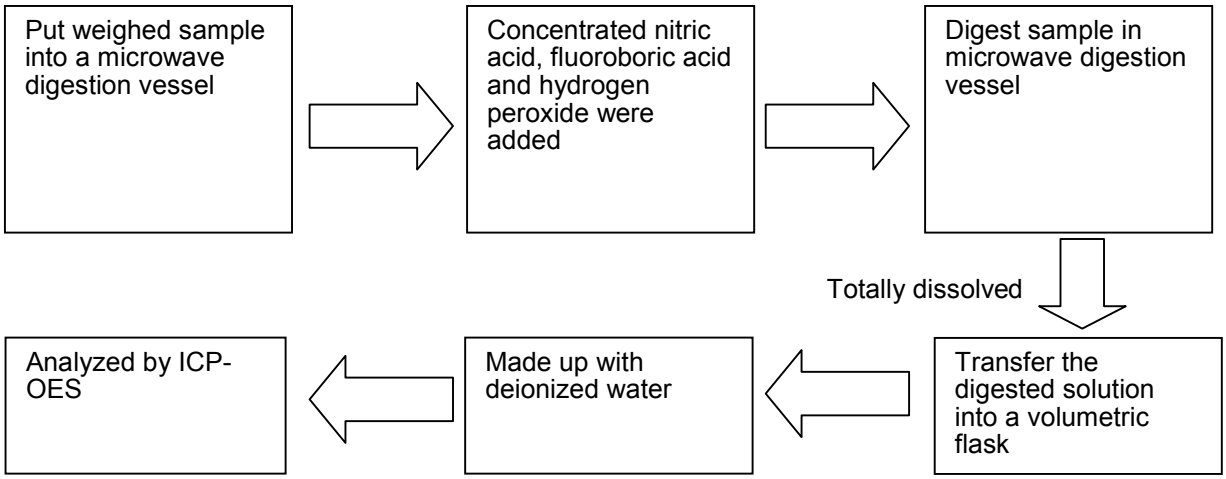
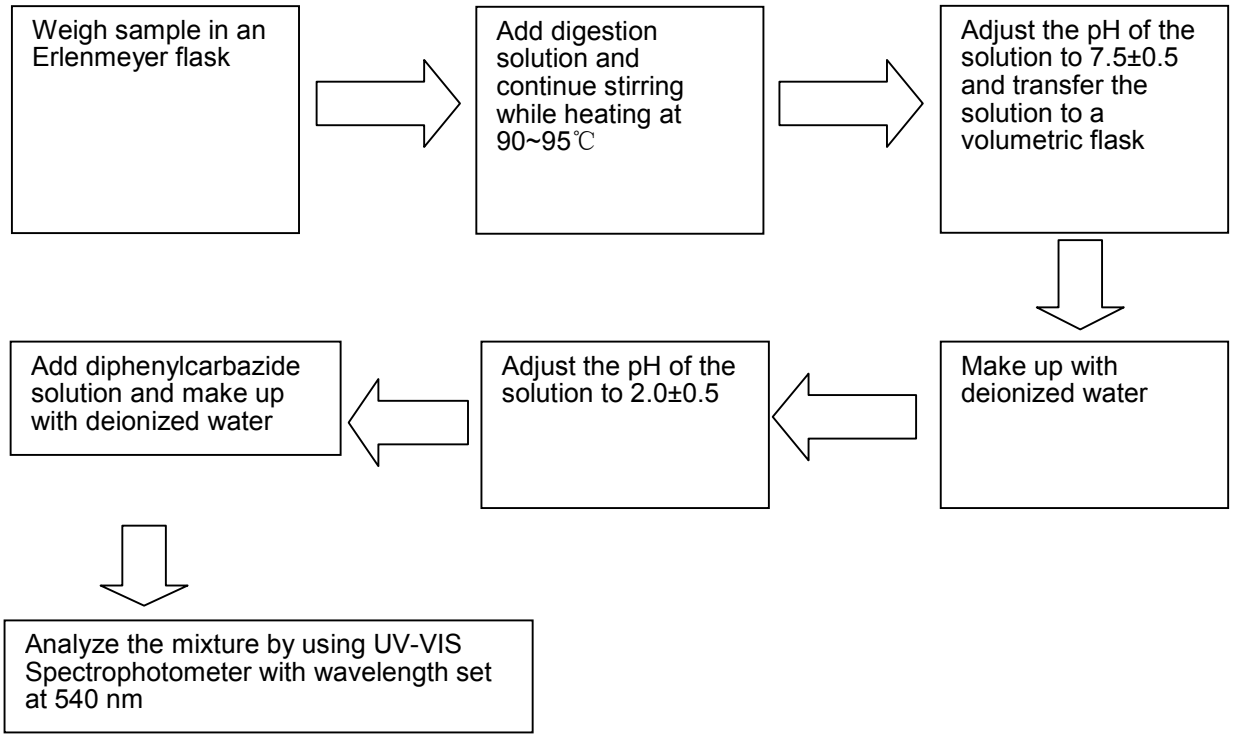
Tests Conducted

2. Test for Hg Content



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



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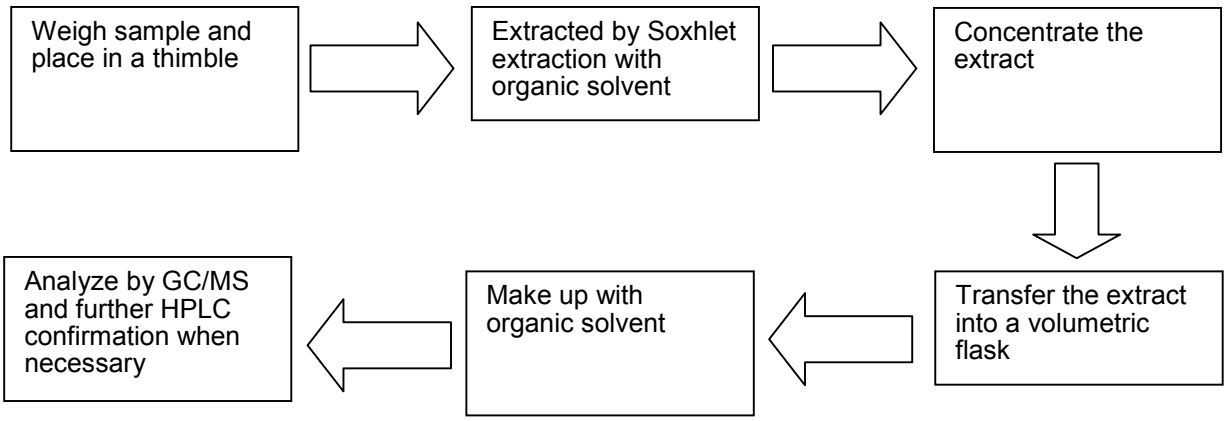
Tests Conducted

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
Attention is drawn to the terms and conditions printed overleaf.

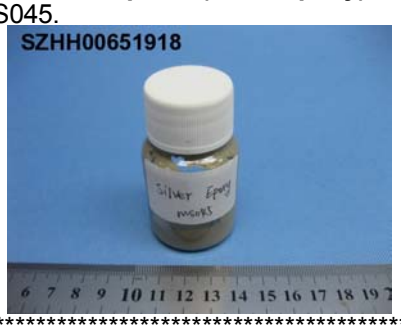
Test Report Number: SZHH00651918

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 **silver color paste (silver epoxy).**
Part No. : MS045.



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

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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

****

Authorized by:
For Intertek Testing Services
Shenzhen Ltd.

Ben N.L. Lin
General Manager

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Attention is drawn to the terms and conditions printed overleaf.

Test Report Number: SZHH00651918

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 based on dry weight of sample = ppm
< = Less than
ND = Not detected

****

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Attention is drawn to the terms and conditions printed overleaf.

Test Report Number: SZHH00651918

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)

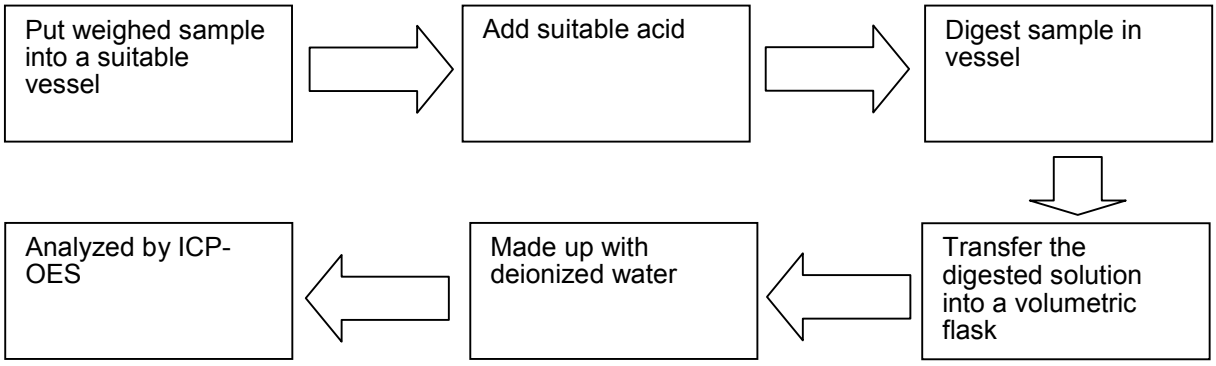
The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

(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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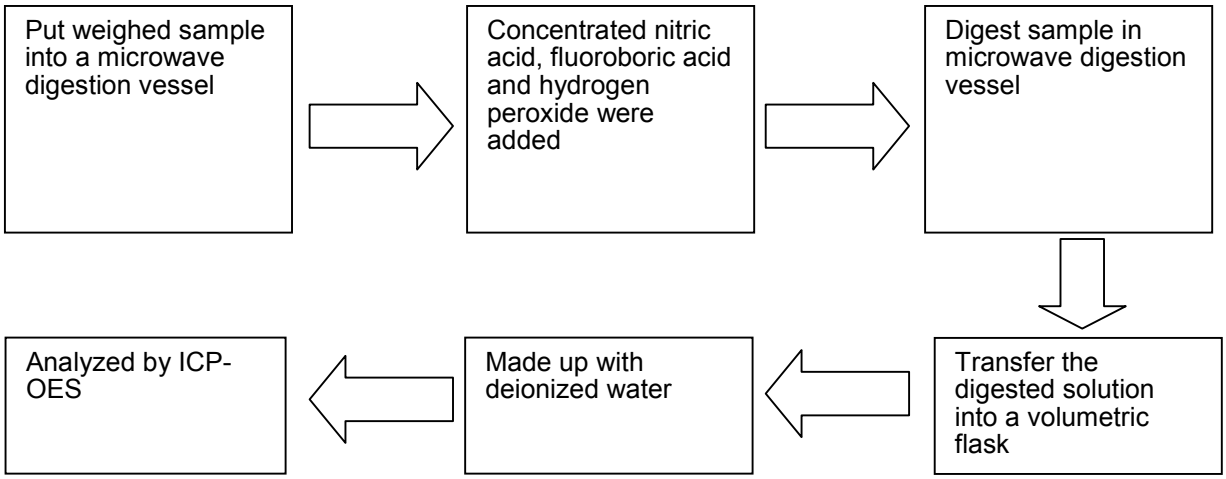
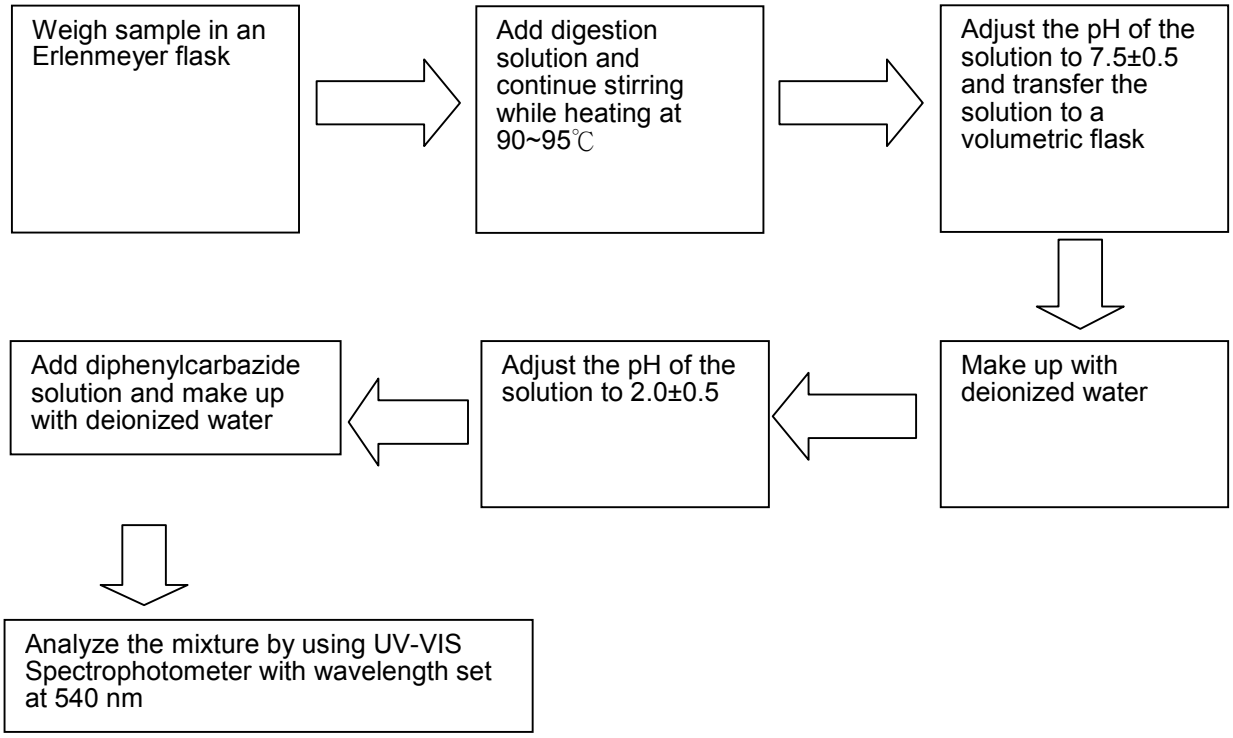
Tests Conducted

2. Test for Hg Content



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



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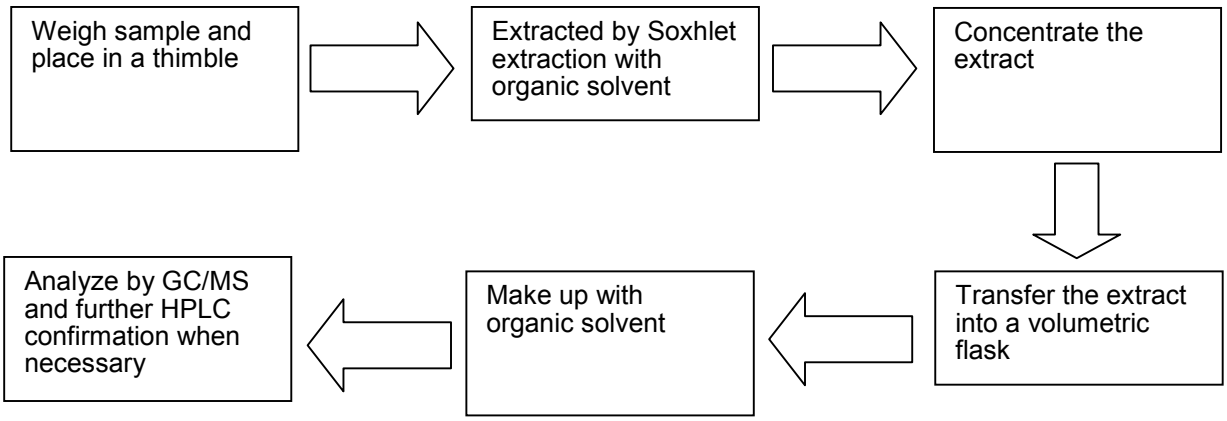
Tests Conducted

4. Test for PBBs/PBDEs Contents



2 Halogen Content

(Ⅰ) Test Result Summary:

Testing Item	Result (mg/kg)
Fluorine (F) Content	ND
Chlorine (Cl) Content	435
Bromine (Br) Content	ND
Iodine (I) Content	ND

mg/kg= milligram per kilogram based on dry weight of sample = 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: Dec 08, 2011
Testing period: Dec 08, 2011 to Dec 14, 2011

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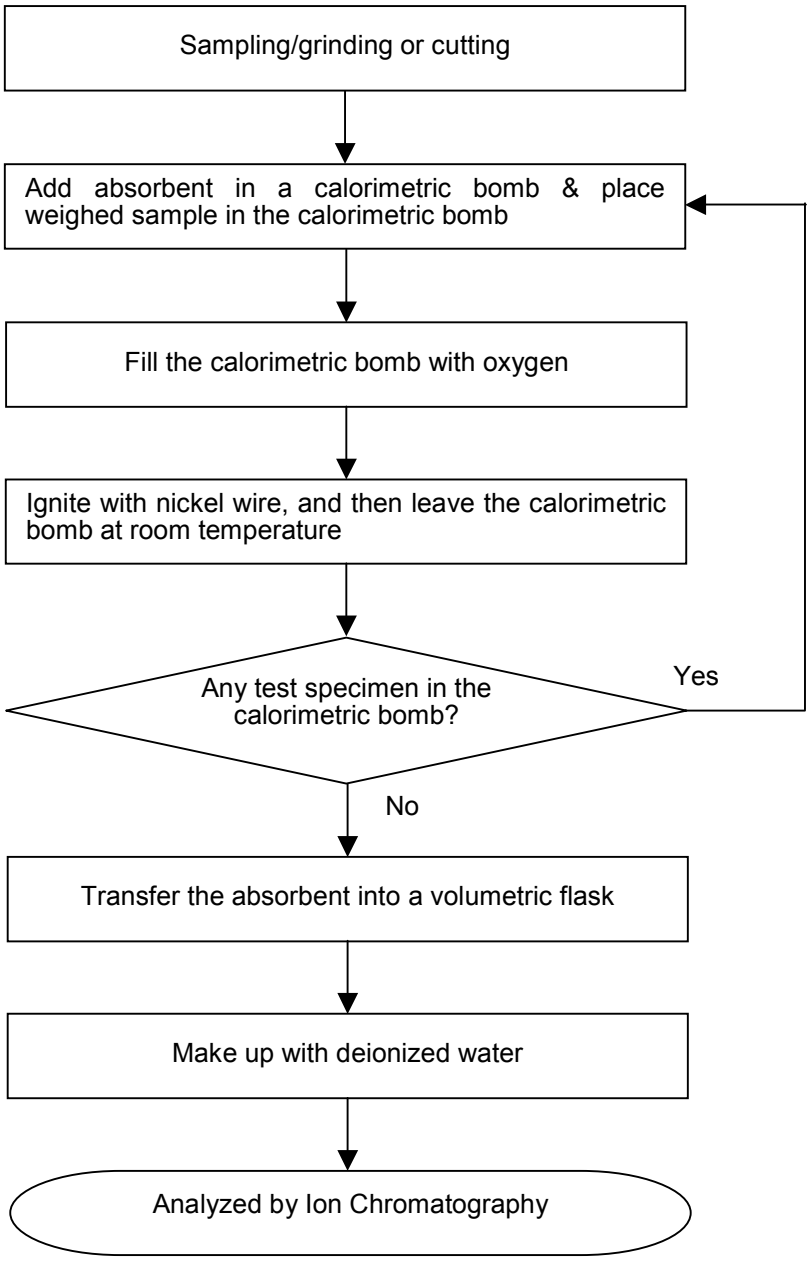
Attention is drawn to the terms and conditions printed overleaf.

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 (%)
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

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

Tested sample: Grey paste.

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.

Result: Less than 10 mg/kg

mg/kg =milligram per kilogram

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

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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
Attention is drawn to the terms and conditions printed overleaf.

Test Report Number: SZHH00699676

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

Date: Jun 18, 2012

Attn: KRISTEEN BACILA/ARSENIO CESISTA JR.

Sample Description:
One (1) submitted sample said to be **silver color plated metal wire (wire lead).**
Part No. : MS046.

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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
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
Attention is drawn to the terms and conditions printed overleaf.

Test Report Number: SZHH00699676

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 supersedure 2011/65/EU for homogeneous material.

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Attention is drawn to the terms and conditions printed overleaf.

Test Report Number: SZHH00699676

Tests Conducted

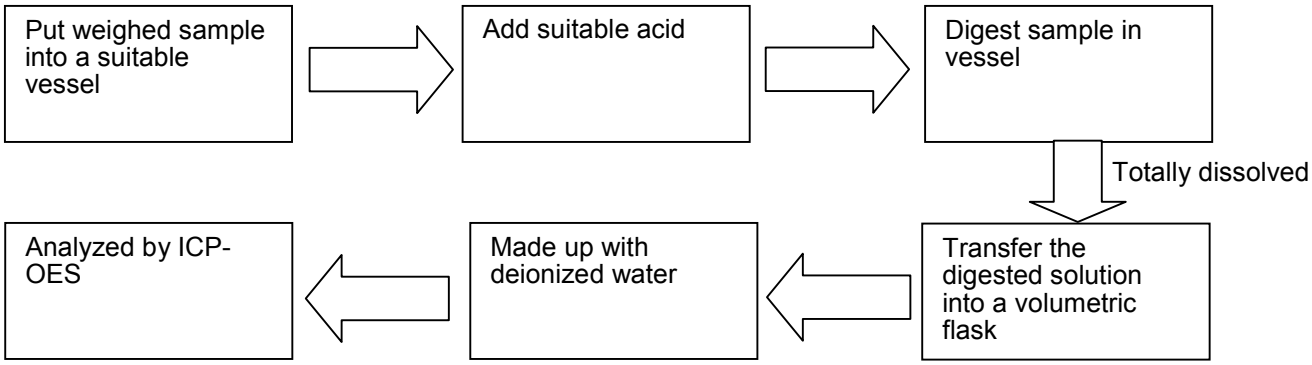
(C) Test Method:

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 : Jun 09, 2012
Testing period : Jun 09, 2012 to Jun 12, 2012

(D) Measurement Flowchart:

1. Test for Cd/Pb Contents



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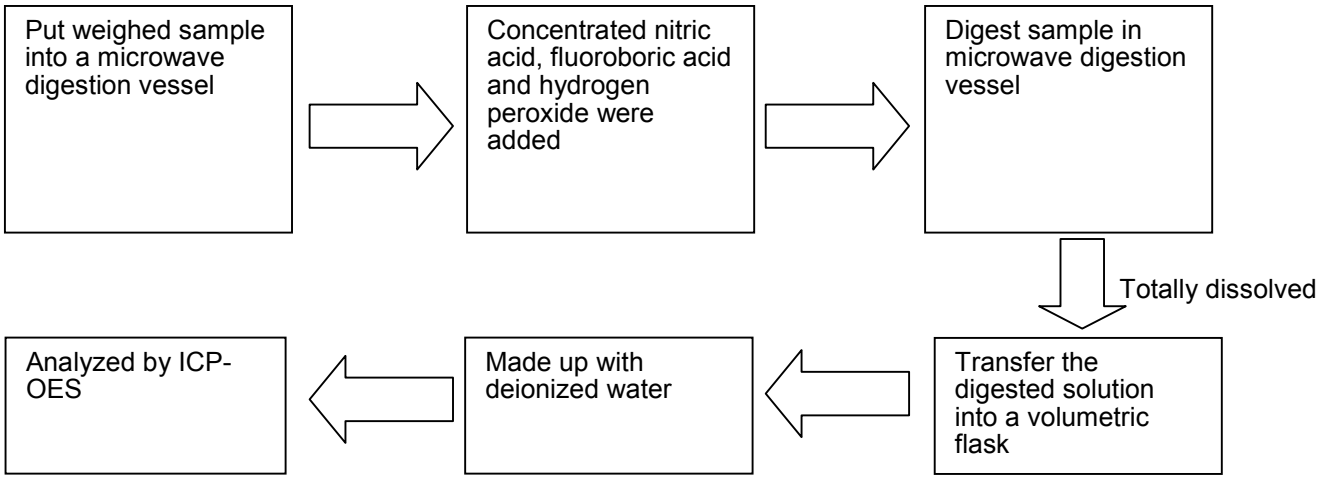
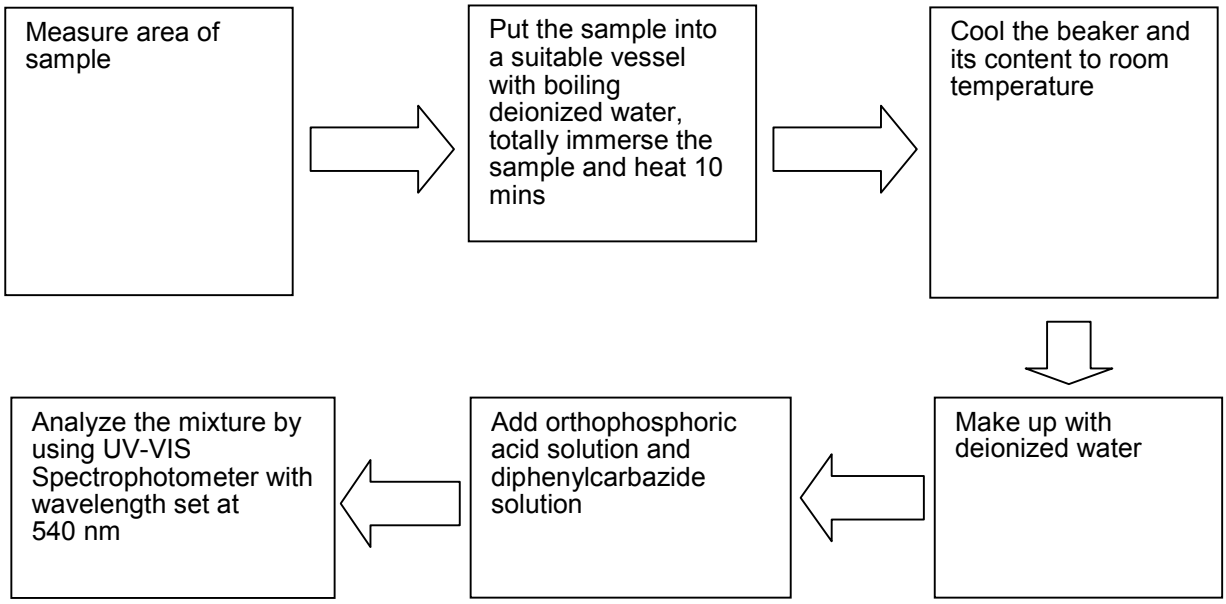
Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067
Attention is drawn to the terms and conditions printed overleaf.

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

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
Attention is drawn to the terms and conditions printed overleaf.

Test Report Number: SZHH00651933

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 **purple powder (black epoxy powder).**
Part No. : MS050.

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

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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

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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
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Tel: (86-755) 2602 0111 Fax: (86-755) 2683 7118/9 Postcode: 518067
Attention is drawn to the terms and conditions printed overleaf.

Test Report Number: SZHH00651933

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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(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)

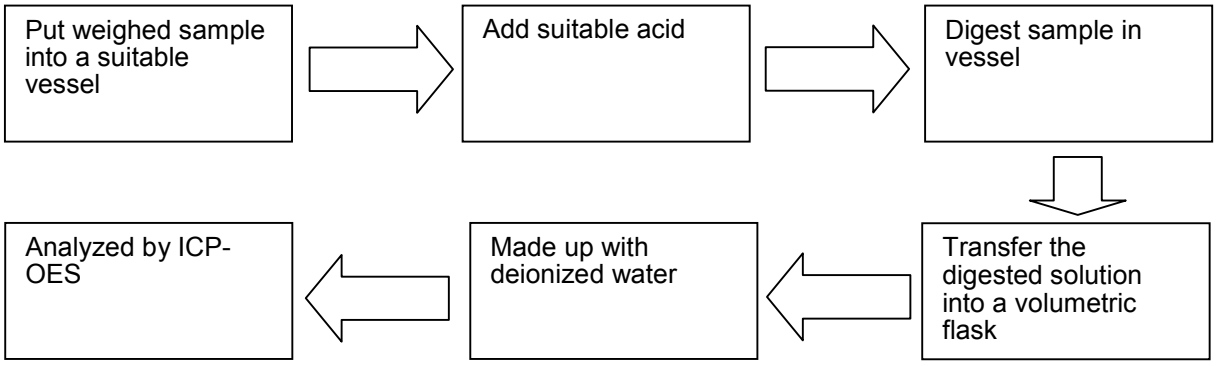
The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

(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 09, 2011

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



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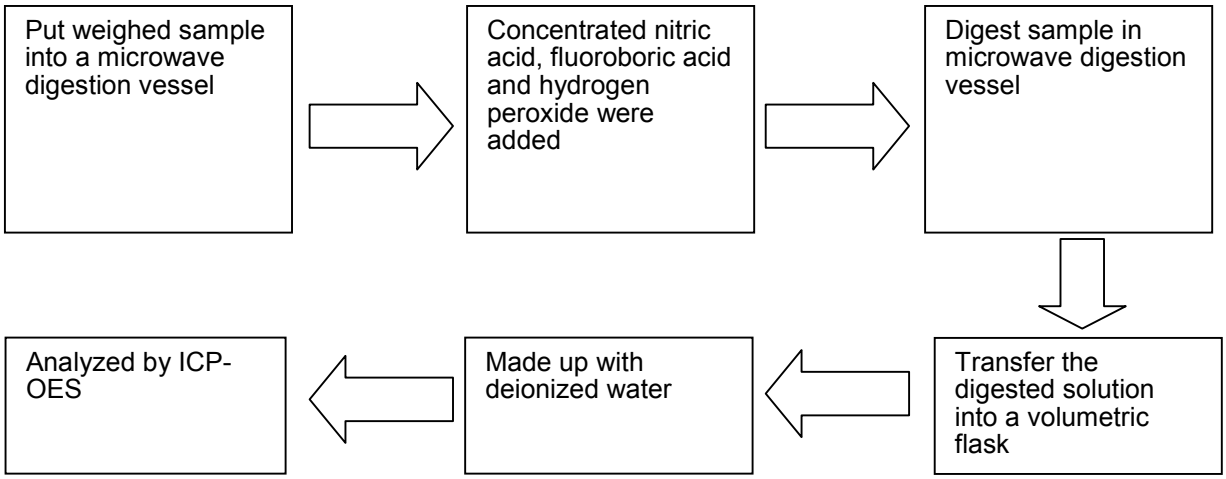
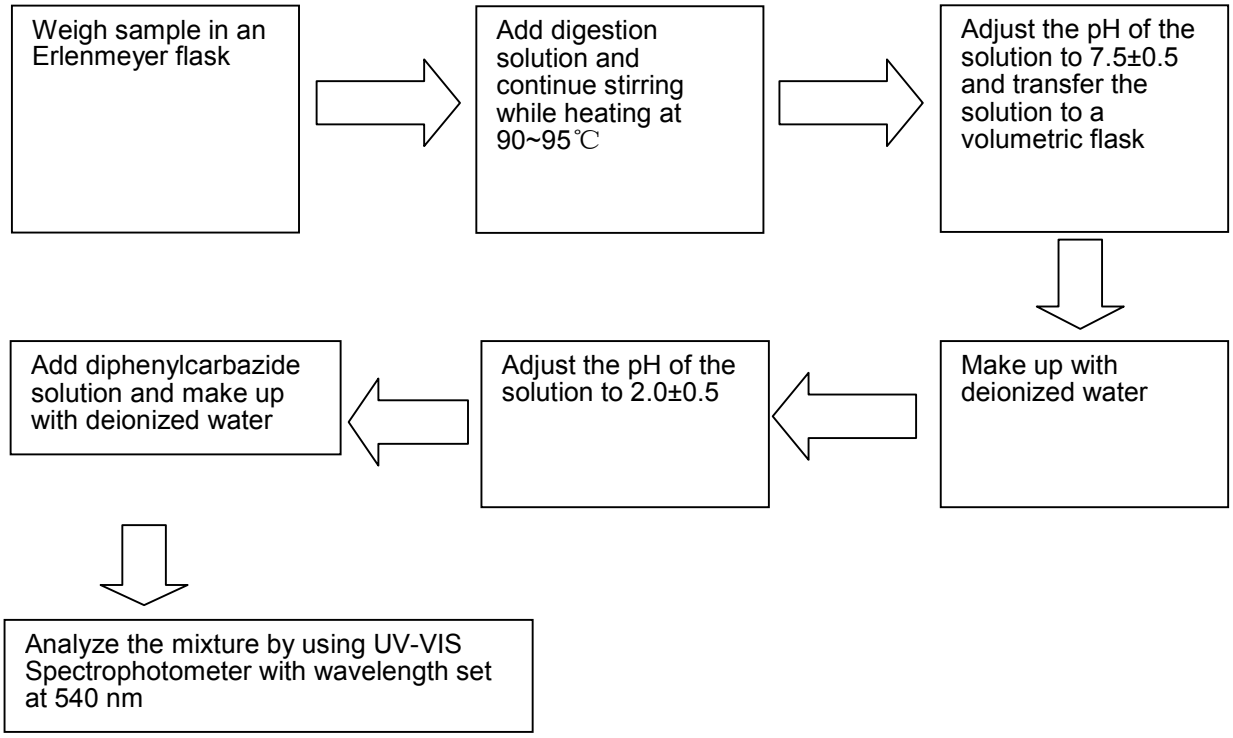
Tests Conducted

2. Test for Hg Content



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



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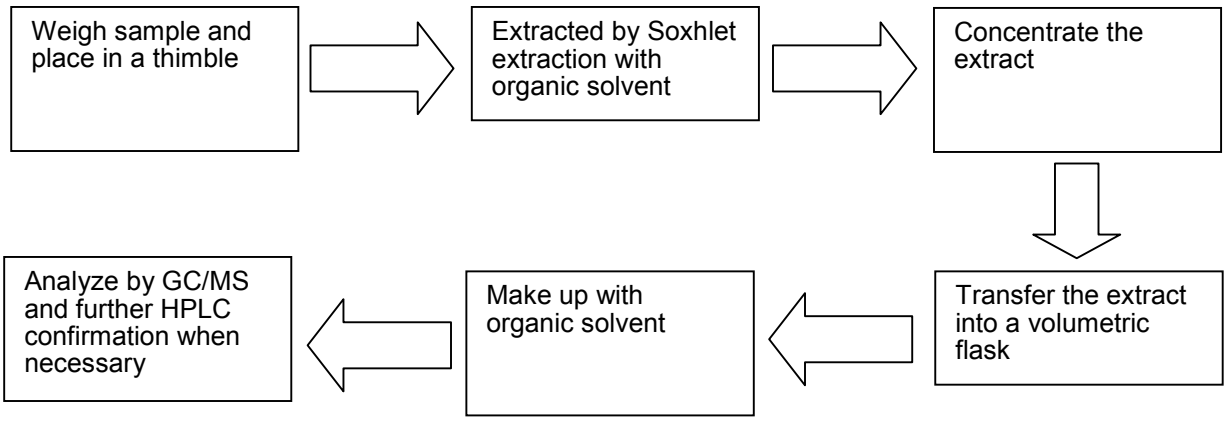
Tests Conducted

4. Test for PBBs/PBDEs Contents



2 Halogen Content

(Ⅰ) Test Result Summary:

Testing Item	Result (mg/kg)
Fluorine (F) Content	ND
Chlorine (Cl) Content	432
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: Dec 08, 2011
Testing period: Dec 08, 2011 to Dec 14, 2011

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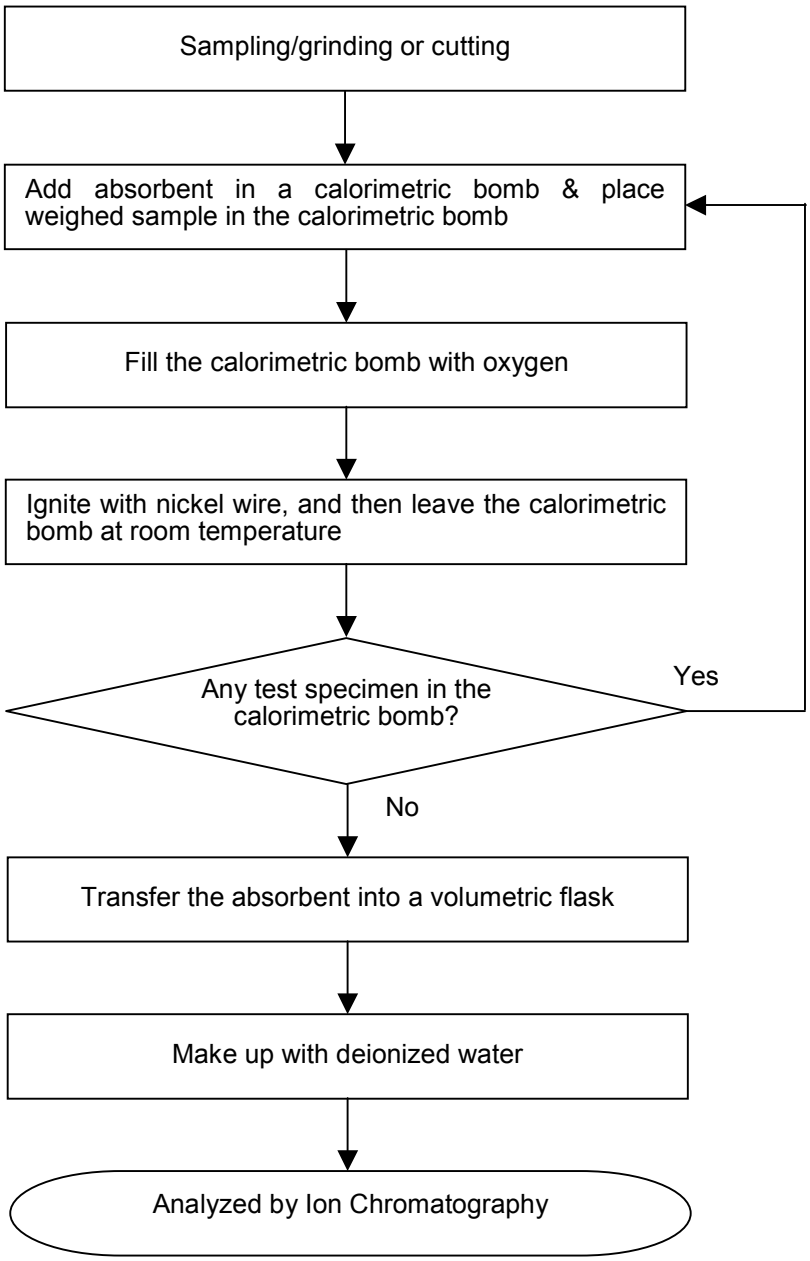
Tests Conducted

(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 (%)
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 submitted sample.

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.

Result: Less than 10 mg/kg

mg/kg =milligram per kilogram

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

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End of report

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