



ICP Test Report Certification Packet

Company name: Littelfuse, Inc.

Product Series: Very fast Acting Semiconductor Fuse

Product #: L50S Series (excluding 50A and 60A)

Issue Date: February 10, 2012

It is hereby certified by Littelfuse, Inc. that there is neither RoHS (EU Directive 2002/95/EC)-restricted substance nor such use, for materials to be used for unit parts, for packing/packaging materials, and for additives and the like in the manufacturing processes. 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 Very Fast Acting Semiconductor Fuse RoHS-Compliant series products manufactured by Littelfuse, Inc.

< Raw Materials Used

Please see Table 1

(2) The ICP data on all measurable substances

Please see appropriate pages as identified in Table 1

Remarks : Pb (lead) contained in a high temperature melting solder > 85% and is categorized as exempt under section 7a of the Rohs Annex.

Pb (lead) as an alloying element in copper alloys containing up to 4% lead by weight and is categorized as exempt under section 6c of the RoHs Annex.

L50S50 & L50S60 are Non-RoHS.

Table 1: List of Raw Materials covered by this report

Total Parts	Raw Material Part Number	Raw Material Description	Page(s)
1	685xxx	Element-Pure Ag	3-7
2	039145	Body-Melamine	8-14
3	882-691	Retaining Pin	15-19
4	889-113	Sand Filler-Plug	20-24
5	897-xxx-xxx	Endbell (897-065-100)	25-32
6	916-069	Eyelet	33-37
7	090190	Filler	38-44
8	195171	Solder Paste	45-53

Test Report

Number : TWNC00240910

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

Date : Jan 20, 2012

Sample Description:

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

Part Description : Pure Silver Strip

Part Number : 685xxx

Date Sample Received : Jan 16, 2012

Date Test Started : Jan 16, 2012

Test Conducted :

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

Authorized By:

On Behalf Of Intertek Testing Services
Taiwan Limited

K. Y. Liang
Director

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Number : TWNC00240910

Test Conducted

(I) Test Result Summary :

<u>Test Item</u>	<u>Result (ppm)</u>
	<u>Silvery Metal</u>
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content (mg/kg with 50cm ²)	Negative (< 0.02)

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg
 ND = Not detected
 < = Less than
 mg/kg with 50cm² = milligram per kilogram with 50 square centimetre
 Negative = A negative test result indicated positive observation was not found at the time of Test.

Responsibility of Chemist : Irene Chiou / Kevin Liu

Date Sample Received : Jan 16, 2012

Test Period : Jan 16, 2012 To Jan 20, 2012

(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)

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

Test Conducted

(III) Test Method:

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

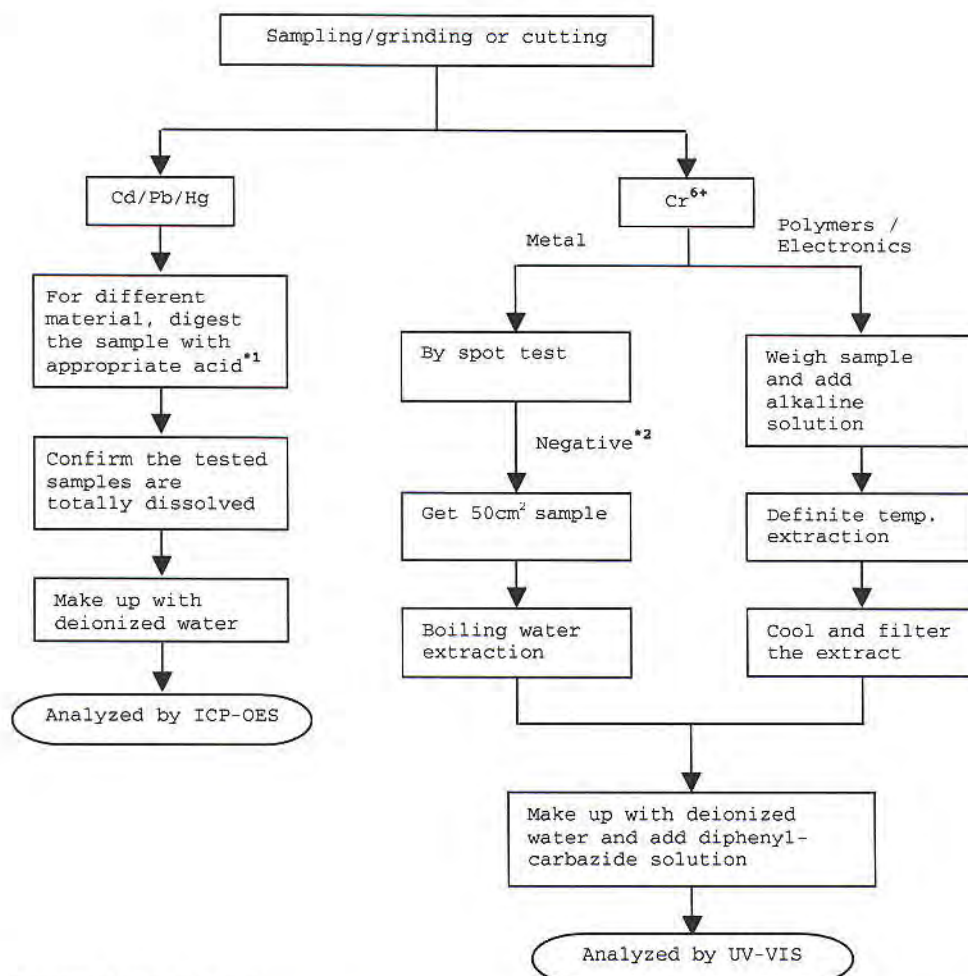
Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)

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

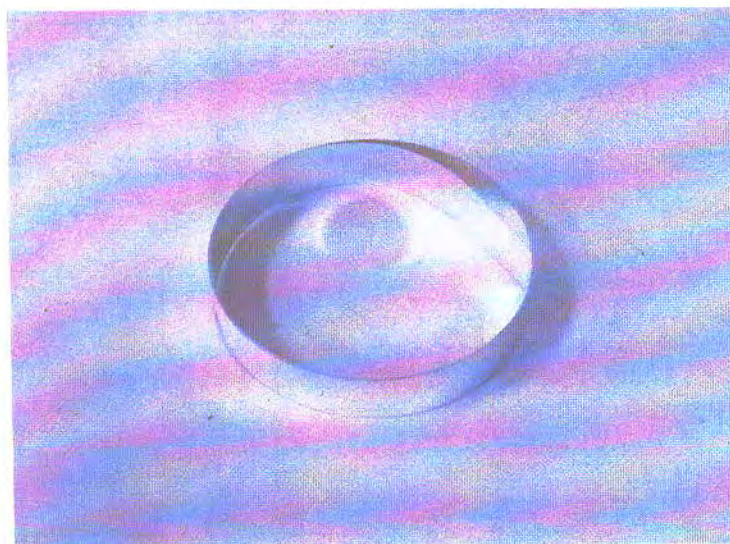
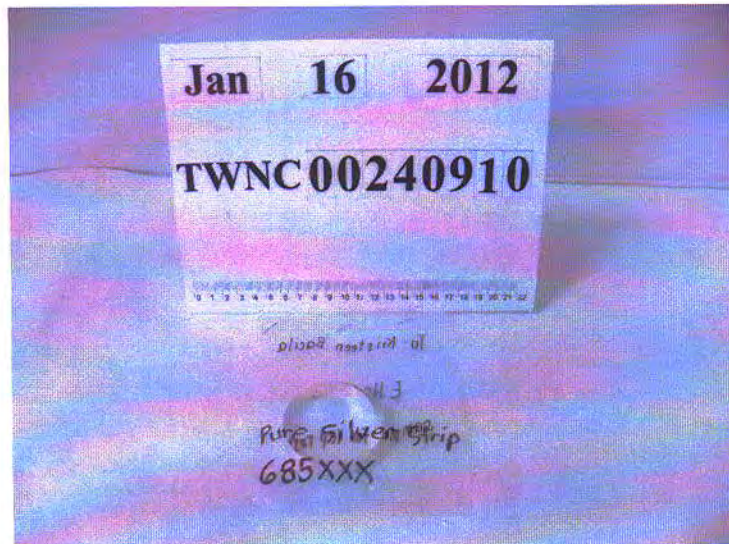
*2: If the result of spot test is positive, Chromium VI would be determined as detected.

End of Report

Number : TWNC00240910

Test Conducted

Photo





Test Report

Number : TWNC00216194

Applicant: Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martinez #1800
Col. Magisterio Seccion 38 C.P.
26070 Piedra Negras, Coahuila,
Mexico

Date : Jul 19, 2011

Sample Description:

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

Part Description : Body
Part Number : 039145
Date Sample Received : Jul 14, 2011
Date Test Started : Jul 14, 2011

Test Conducted :

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

Authorized By:

On Behalf Of Intertek Testing Services
Taiwan Limited



K. Y. Liang
Director

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Number : TWNC00216194

Test Conducted

(I) Test Result Summary :

Test Item	Result (ppm)
	White Material
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 based on weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Jul 14, 2011

Test Period : Jul 14, 2011 To Jul 19, 2011

Test 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 Ehters (PBDEs)	0.1% (1000ppm)

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

(III) Test Method:

<u>Test Item</u>	<u>Test 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

Number : TWNC00216194

Test Conducted

(III) Test Method:

<u>Test Item</u>	<u>Test Method</u>	<u>Reporting Limit</u>
Polybrominated Biphenyls (PBBs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	5 ppm
Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	5 ppm
Halogen Content	With reference to EN 14582:2007 by calorimetric bomb with oxygen and determined by ion chromatography	50 ppm

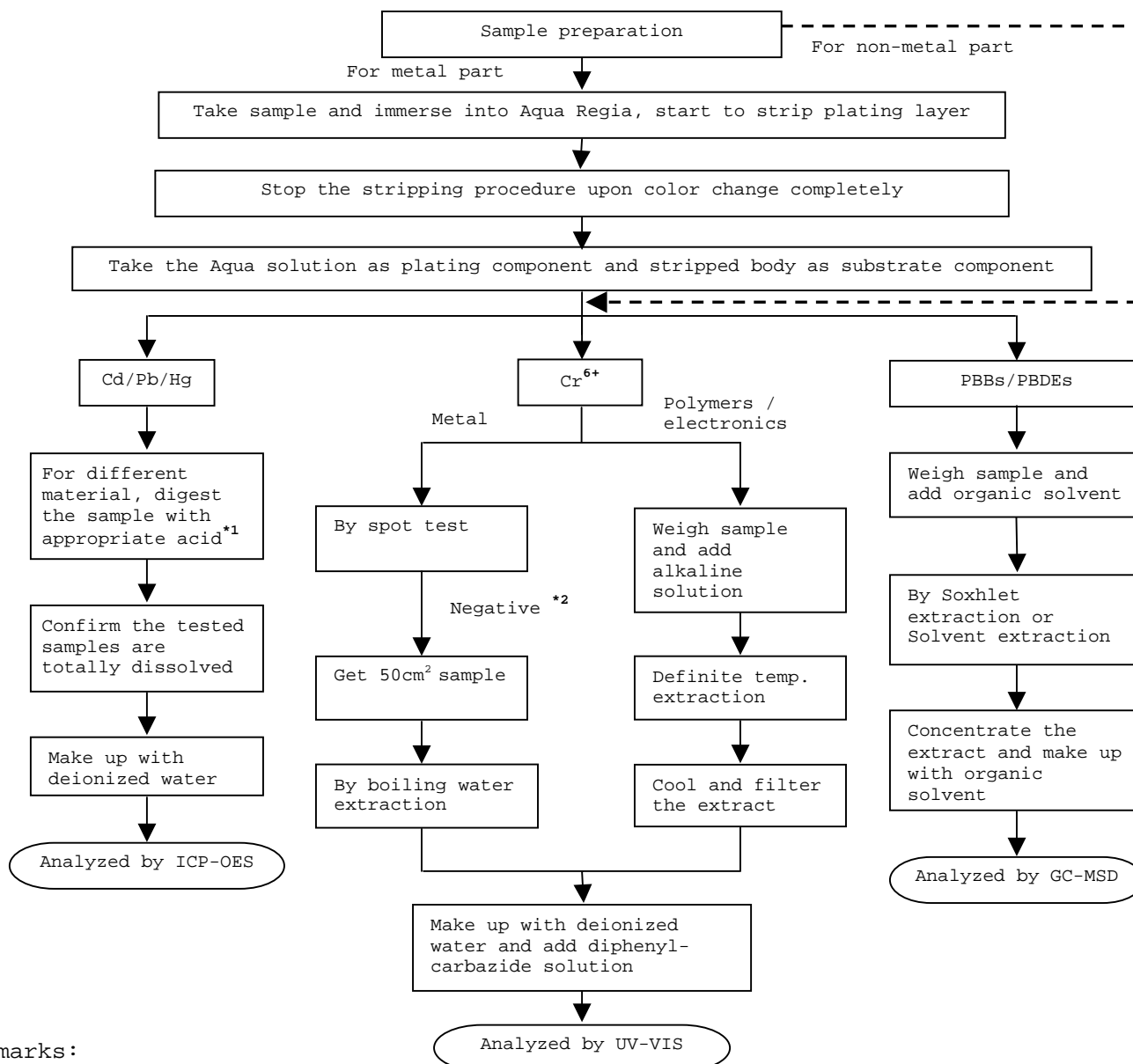
Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

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

Reference Standard: IEC 62321 edition 1.0:2008



Remarks:

*1: List of Appropriate Acid:

Material	Acid Added for Digestion
Polymers	HNO 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

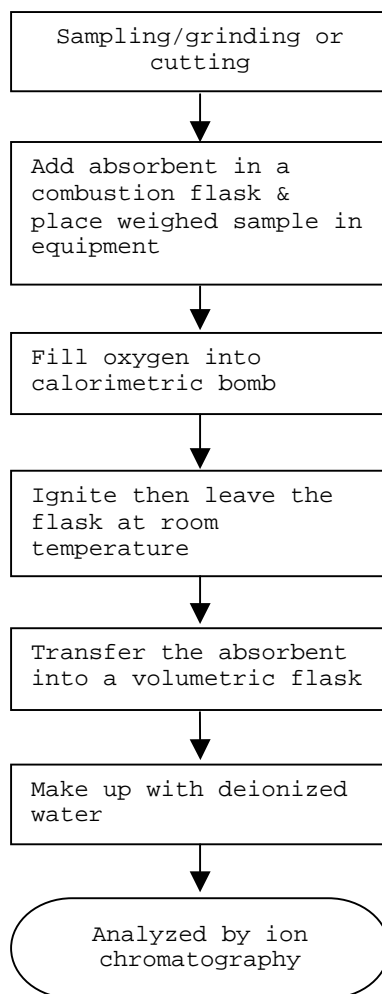
*2: If the result of spot test is positive, Chromium VI would be determined as detected.

Test Conducted

(IV) Measurement Flowchart:

Test for Halogen Content

Reference Standard : EN 14582

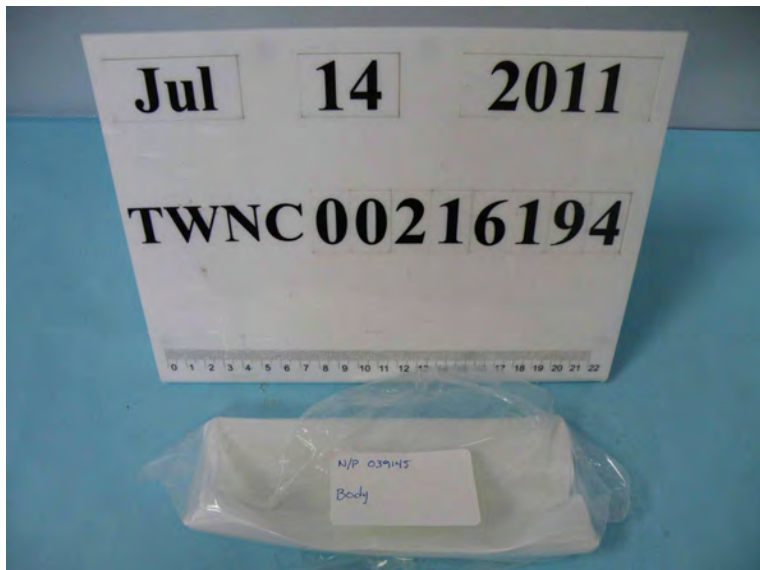


End of Report

Test Conducted

Number : TWNC00216194

Photo





Test Report

Number : TWNC00217926

Applicant: Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martinez #1800
Col. Magisterio Seccion 38 C.P.
26070 Piedra Negras, Coahuila,
Mexico

Date : Jul 26, 2011

Sample Description:

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

Part Description : Retaining Pin

Part Number : 882-691

Date Sample Received : Jul 27, 2011

Date Test Started : Jul 28, 2011

Test Conducted :

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

Authorized By:

On Behalf Of Intertek Testing Services
Taiwan Limited



K. Y. Liang
Director

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Number : TWNC00217926

Test Conducted

(I) Test Result Summary :

<u>Test Item</u>	<u>Result (ppm)</u>
	<u>Submitted Samples</u>
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr^{6+}) content (mg/kg with 50cm ²)	Negative (< 0.02) (#)

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg
 ND = Not detected
 < = Less than
 mg/kg with 50cm² = milligram per kilogram with 50 square centimetre
 Negative = A negative test result indicated positive observation was not found at the time of Test.
 # = Due to the insufficient sample area, reduced total sample surface of 10 cm² was used and the dilution factor was adjusted accordingly.

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

Date Sample Received : Jul 27, 2011

Test Period : Jul 28, 2011 To Aug 01, 2011

(II) RoHS Requirement:

<u>Restricted Substances</u>	<u>Limits</u>
Cadmium (Cd) Content	0.01% (100ppm)
Lead (Pb) Content	0.1% (1000ppm)
Mercury (Hg) Content	0.1% (1000ppm)
Chromium VI (Cr^{6+}) Content	0.1% (1000ppm)

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

Test Conducted

(III) Test Method:

<u>Test Item</u>	<u>Test 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 B, by boiling water extraction and determined by UV-Vis spectrophotometer.	0.02 mg/kg with 50cm ²

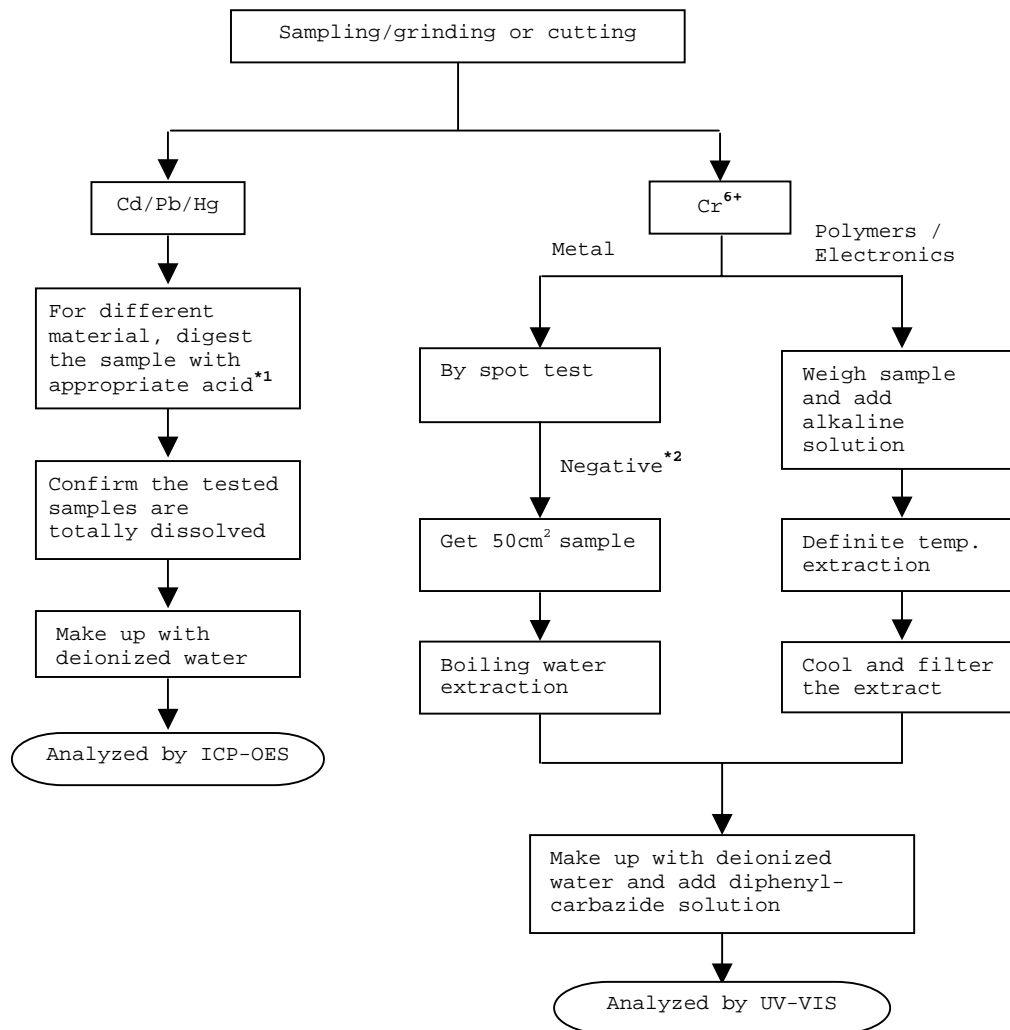
Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)

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.

End of Report

Number : TWNC00217926

Test Conducted

Photo





Test Report

Number : TWNC00222641

Applicant: Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martinez #1800
Col. Magisterio Seccion 38 C.P.
26070 Piedra Negras, Coahuila,
Mexico

Date : Sep 09, 2011

Sample Description:

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

Part Description : Sand filter plug

Part Number : 889-113

Date Sample Received : Sep 05, 2011

Date Test Started : Sep 05, 2011

Test Conducted :

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

Authorized By:

On Behalf Of Intertek Testing Services
Taiwan Limited



K. Y. Liang
Director

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Number : TWNC00222641

Test Conducted

(I) Test Result Summary :

<u>Test Item</u>	<u>Result (ppm)</u>	
	<u>(1)</u>	<u>(2)</u>
Heavy Metal		
Cadmium (Cd) content	ND	ND
Lead (Pb) content	13	ND
Mercury (Hg) content	ND	ND
Chromium VI (Cr ⁶⁺) content (mg/kg with 50cm ²)	Negative (< 0.02) (#)	Negative (< 0.02) (#)

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg
 ND = Not detected
 < = Less than
 mg/kg with 50cm² = milligram per kilogram with 50 square centimetre
 Negative = A negative test result indicated positive observation was not found at the time of Test.
 # = Due to the insufficient sample area, reduced total sample surface of 10 cm² was used and the dilution factor was adjusted accordingly.

Tested Components

- (1) Silvery Metal Base Material
- (2) Silvery Plating Layer

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

Date Sample Received : Sep 05, 2011
 Test Period : Sep 05, 2011 To Sep 08, 2011

(II) RoHS Requirement:

<u>Restricted Substances</u>	<u>Limits</u>
Cadmium (Cd) Content	0.01% (100ppm)
Lead (Pb) Content	0.1% (1000ppm)
Mercury (Hg) Content	0.1% (1000ppm)
Chromium VI (Cr ⁶⁺) Content	0.1% (1000ppm)

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

Test Conducted

(III) Test Method:

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

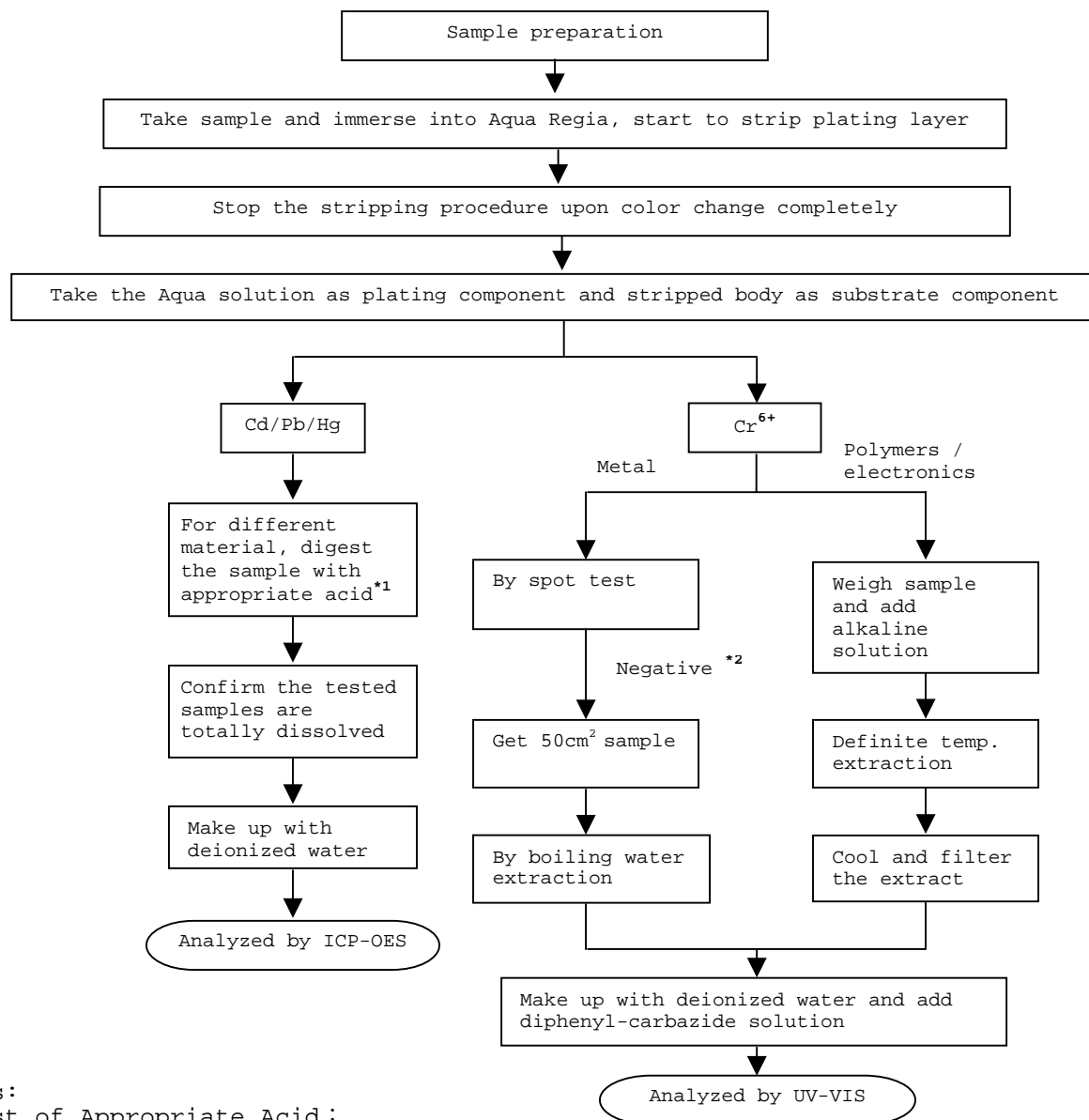
Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

Test for Cd/Pb/Hg/Chromium (VI)

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

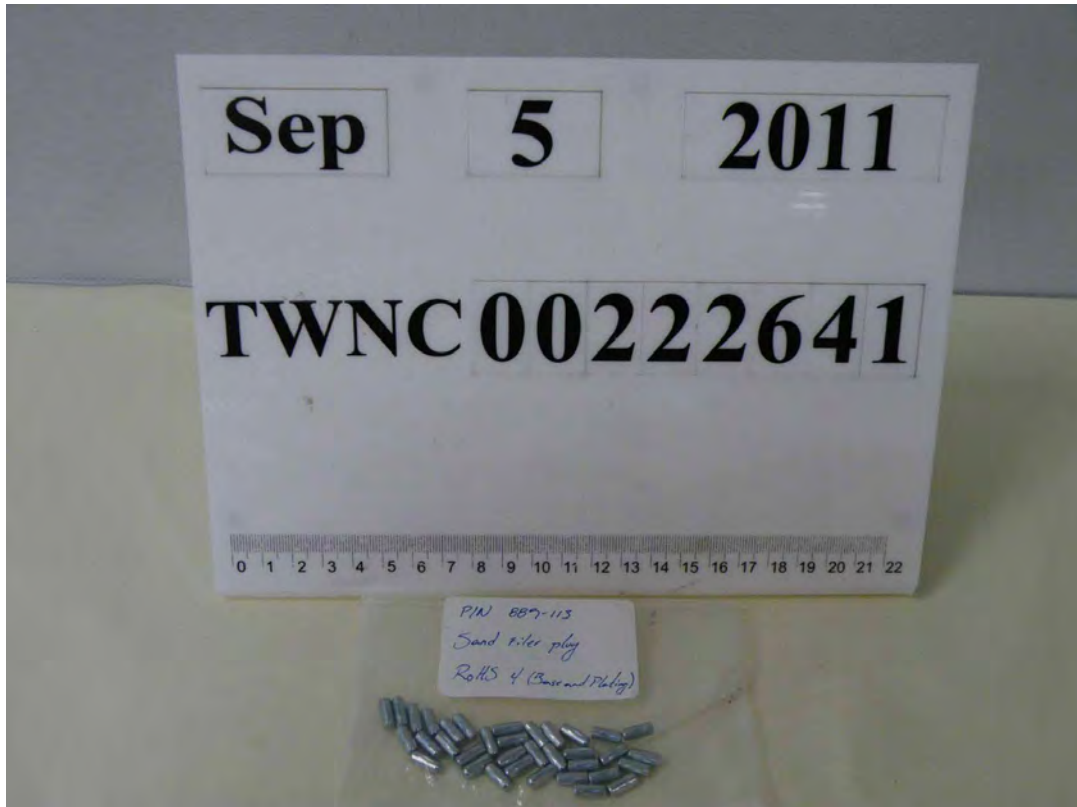
*2: If the result of spot test is positive, Chromium VI would be determined as detected.

End of Report

Number : TWNC00222641

Test Conducted

Photo





Report No.: MX10-1676

Date : 2010-08-16

RESULTS REPORT

INTERTEK TESTING SERVICES

DE MEXICO SA DE CV

LABORATORIO CD. DE MEXICO

DELIVER TO:

Littelfuse, S.A. de C.V.

Bvd. Fausto Z. Martínez 1800, Col. Magisterio Sección 38,
Piedras Negras, Coahuila

ATTENTION:

Ing. Mario Falcón / Ing. Manuel Berain

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The results that appear in this report belong solely to (s) shows (s) analyzed (s).

1ª. Emisión Junio 2005, 1º Revisión Junio 26, 2009.

ILTA/003/GENS-F8

Intertek Testing Services de México, S.A. de C.V.

**Bvd. Manuel Ávila Camacho No. 182 Col. Lomas de Chapultepec
C.P. 11650, México, D.F. Tel.: 50912150 Fax: 55407863**

www.intertek.com

TEST REPORT

APPLICANT

Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martínez 1800, Col. Magisterio Sección 38, Piedras Negras, Coahuila
Ing. Mario Falcón / Ing. Manuel Berain

SAMPLE DESCRIPTION

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

Sample Description	Serie L255
	1) N.P. 882-691
	2) N.P. 889-113
	3) N.P. 893-030
	4) N.P. 897-065-000
	5) N.P. 898-012-024
Item No.	6) N.P. 900-123A
	7) N.P. 090198
	8) N.P. 911-039-102
	9) N.P. 916-069
	10) N.P. 927-297

Country of Origin	NP
Buyer's Name	NP
Supplier's Name	NP
Date sample received	2010-07-29
Testing period	2010-08-05 to 2010-08-12

TEST CONDUCTED

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

CONCLUSION

<u>Sample Number</u>	<u>Testing item</u>	<u>Conclusion</u>	<u>Failed component</u>	<u>Failed result</u>
1	N.P. 882-691	Pass See Result summary	---	---
2	N.P. 889-113	Pass See Result summary	---	---
3	N.P. 893-030	Pass See Result summary	---	---
4	N.P. 897-065-000	Fail See Result summary	Lead	43680,0
5	N.P. 898-012-024	Pass See Result summary	---	---
6	N.P. 900-123A	Pass See Result summary	---	---
7	N.P. 090198	Pass See Result summary	---	---
8	N.P. 911-039-102	Pass See Result summary	---	---
9	N.P. 916-069	Pass See Result summary	---	---
10	N.P. 927-297	Pass See Result summary	---	---

TEST CONDUCTED

Samples:

- 1) N.P. 882-691
- 2) N.P. 889-113
- 3) N.P. 893-030
- 4) N.P. 897-065-000

TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

TESTING ITEM	Ω RESULT (ppm)				Limit
	(1)	(2)	(3)	(4)	
Cadmium (Cd) content	39,39	37,65	6,684	2,560	0,01% (100 ppm)
Lead (Pb) content	ND	ND	8,593	43680	0,1% (1000 ppm)
Mercury (Hg) content	ND	ND	ND	ND	0,1% (1000 ppm)
Chromium (VI) (Cr ⁶⁺)	ND	ND	ND	ND	0,1% (1000 ppm)
POLYBROMINATED BIPHENYLS (PBBs) Total	ND	---	---	---	0,1% (1000 ppm)
Monobromobiphenyl (MonoBB)	ND	---	---	---	---
Dibromobiphenyl (DiBB)	ND	---	---	---	---
Tribromobiphenyl (TriBB)	ND	---	---	---	---
Tetrabromobiphenyl (TetraBB)	ND	---	---	---	---
Pentabromobiphenyl (PentaBB)	ND	---	---	---	---
Hexabromobiphenyl (HexaBB)	ND	---	---	---	---
Heptabromobiphenyl (HeptaBB)	ND	---	---	---	---
Octabromobiphenyl (OctaBB)	ND	---	---	---	---
Nonabromobiphenyl (NonaBB)	ND	---	---	---	---
Decabromobiphenyl (DecaBB)	ND	---	---	---	---
POLYBROMINATED DIPHENYL ETHERS (PBDEs) Total	ND	---	---	---	0,1% (1000 ppm)
Monobromodiphenyl (MonoBDE)	ND	---	---	---	---
Dibromodiphenyl (DiBDE)	ND	---	---	---	---
Tribromodiphenyl (TriBDE)	ND	---	---	---	---
Tetrabromodiphenyl (TetraBDE)	ND	---	---	---	---
Pentabromodiphenyl (PentaBDE)	ND	---	---	---	---
Hexabromodiphenyl (HexaBDE)	ND	---	---	---	---
Heptabromodiphenyl (HeptaBDE)	ND	---	---	---	---
Octabromodiphenyl (OctaBDE)	ND	---	---	---	---
Nonabromodiphenyl (NonaBDE)	ND	---	---	---	---
Decabromodiphenyl (DecaBDE)	ND	---	---	---	---

TEST CONDUCTED

Samples:

- 5) N.P. 898-012-024
- 6) N.P. 900-123A
- 7) N.P. 090198
- 8) N.P. 911-039-102

TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

TESTING ITEM	Ω RESULT (ppm)				Limit
	(5)	(6)	(7)	(8)	
Cadmium (Cd) content	ND	ND	ND	ND	0,01% (100 ppm)
Lead (Pb) content	6,722	ND	11,18	25,22	0,1% (1000 ppm)
Mercury (Hg) content	ND	ND	ND	ND	0,1% (1000 ppm)
Chromium (VI) (Cr ⁶⁺)	ND	ND	ND	ND	0,1% (1000 ppm)
POLYBROMINATED BIPHENYLS (PBBs) Total	---	ND	---	---	0,1% (1000 ppm)
Monobromobiphenyl (MonoBB)	---	ND	---	---	---
Dibromobiphenyl (DiBB)	---	20,0	---	---	---
Tribromobiphenyl (TriBB)	---	ND	---	---	---
Tetrabromobiphenyl (TetraBB)	---	ND	---	---	---
Pentabromobiphenyl (PentaBB)	---	ND	---	---	---
Hexabromobiphenyl (HexaBB)	---	ND	---	---	---
Heptabromobiphenyl (HeptaBB)	---	ND	---	---	---
Octabromobiphenyl (OctaBB)	---	ND	---	---	---
Nonabromobiphenyl (NonaBB)	---	ND	---	---	---
Decabromobiphenyl (DecaBB)	---	ND	---	---	---
POLYBROMINATED DIPHENYL ETHERS (PBDEs) Total	---	ND	---	---	0,1% (1000 ppm)
Monobromodiphenyl (MonoBDE)	---	ND	---	---	---
Dibromodiphenyl (DiBDE)	---	ND	---	---	---
Tribromodiphenyl (TriBDE)	---	ND	---	---	---
Tetrabromodiphenyl (TetraBDE)	---	ND	---	---	---
Pentabromodiphenyl (PentaBDE)	---	ND	---	---	---
Hexabromodiphenyl (HexaBDE)	---	ND	---	---	---
Heptabromodiphenyl (HeptaBDE)	---	ND	---	---	---
Octabromodiphenyl (OctaBDE)	---	ND	---	---	---
Nonabromodiphenyl (NonaBDE)	---	ND	---	---	---
Decabromodiphenyl (DecaBDE)	---	ND	---	---	---

TEST CONDUCTED

Samples:

- 9) N.P. 916-069
- 10) N.P. 927-297

TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

TESTING ITEM	Ω RESULT (ppm)		Limit
	(9)	(10)	
Cadmium (Cd) content	ND	ND	0,01% (100 ppm)
Lead (Pb) content	52,55	141,8	0,1% (1000 ppm)
Mercury (Hg) content	ND	ND	0,1% (1000 ppm)
Chromium (VI) (Cr ⁶⁺)	ND	ND	0,1% (1000 ppm)

ppm = parts per million based on dry weight of sample.

μg/cm² = microgram per square centimeter.

mg/kg WITH 50cm² = milligram per kilogram with 50 square centimeter.

< = less than.

ND = Not detected.

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

These Accreditations only apply for the methods listed in such. Not accredited under EMA Ω.

Prepared and checked by :
For Intertek

Laboratory Manager

The Official Mexican Standard NOM-008-SCFI-1993 establishes like separator decimal the comma (,).

NOTE :DecaBDE IN POLYMERIC APPLICATIONS IS EXEMPTED ACCORDING TO
ROHS DIRECTIVE AMENDMENT 2005/717/EC.

=ACCORDING TO IEC 62321, A POSITIVE RESULT INDICATES THE PRESENCE OF
Cr(VI) COATING. IT IS THE Cr(VI) CONCENTRATION DETECTED IN THE
BOILING-WATER-EXTRACTION SOLUTION AND SHOULD NOT BE INTERPRETED AS
THE Cr(VI) CONCENTRATION IN THE COATING LAYER OF THE SAMPLE.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF
TESTED COMPONENTS OF THE SAMPLE MX10-1676-1 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF
TESTED COMPONENTS OF THE SAMPLE MX10-1676-2 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF
TESTED COMPONENTS OF THE SAMPLE MX10-1676-3 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF
TESTED COMPONENTS OF THE SAMPLE MX10-1676-4 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF
TESTED COMPONENTS OF THE SAMPLE MX10-1676-5 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF
TESTED COMPONENTS OF THE SAMPLE MX10-1676-6 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF
TESTED COMPONENTS OF THE SAMPLE MX10-1676-7 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF
TESTED COMPONENTS OF THE SAMPLE MX10-1676-8 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF
TESTED COMPONENTS OF THE SAMPLE MX10-1676-9 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF
TESTED COMPONENTS OF THE SAMPLE MX10-1676-10 WERE TESTED TOGETHER.

Test method :

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1-10	Chromium VI (Cr ⁶⁺) content	With reference to USEPA 3060, by EPA 7196	QHU2009-3p159,160	2010-08-06	JLHS	2,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1, 6	POLYBROMINATE D BIPHENYLS (PBBs)	Determined by GC-MSD	2010-004627-P CL	2010-08-12	▲ CONT	50,0
1, 6	POLYBROMINATE D DIPHENYL ETHERS (PBDEs)	Determined by GC-MSD	2010-004627-P CL	2010-08-12	▲ CONT	50,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	5,0
2	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	5,0
3	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	5,0
4	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	5,0
5	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	5,0
6	Lead (Pb) content	With reference to USEPA 3052, by EPA 6010	MET2010-32p47	2010-08-12	DCL,JMR	5,0
7	Lead (Pb) content	With reference to USEPA 3052, by EPA 6010	MET2010-32p48	2010-08-12	DCL,JMR	5,0
8	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	5,0
9	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	5,0
10	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	5,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	2,0
2	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	2,0
3	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	2,0
4	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	2,0
5	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	2,0
6	Cadmium (Cd) content	With reference to USEPA 3052, by EPA 6010	MET2010-32p47	2010-08-12	DCL,JMR	2,0
7	Cadmium (Cd) content	With reference to USEPA 3052, by EPA 6010	MET2010-32p48	2010-08-12	DCL,JMR	2,0
8	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	2,0
9	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	2,0
10	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-32p46	2010-08-12	DCL,JMR	2,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-31p19	2010-08-10	JAPM	0,083
2	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-31p18	2010-08-10	JAPM	0,083
3	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-31p18	2010-08-10	JAPM	0,083
4	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-31p18	2010-08-10	JAPM	0,083
5	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-31p18	2010-08-10	JAPM	0,083
6	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-31p15	2010-08-10	JAPM	0,083
7	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-31p16	2010-08-10	JAPM	0,083
8	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-31p18	2010-08-10	JAPM	0,083
9	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-31p18	2010-08-10	JAPM	0,083
10	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-31p19	2010-08-10	JAPM	0,083



Test Report

Number : TWNC00217925

Applicant: Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martinez #1800
Col. Magisterio Seccion 38 C.P.
26070 Piedra Negras, Coahuila,
Mexico

Date : Aug 03, 2011

Sample Description:

One (1) group of submitted samples said to be :
Part Description : Eyelet plain brass
Part Number : 916-069
Date Sample Received : Jul 27, 2011
Date Test Started : Jul 28, 2011

Test Conducted :

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

Authorized By:

On Behalf Of Intertek Testing Services
Taiwan Limited



K. Y. Liang
Director

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approval of the laboratory.



Number : TWNC00217925

Test Conducted

(I) Test Result Summary :

<u>Test Item</u>	<u>Result (ppm)</u>
	<u>Coppery Metal</u>
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	30
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content (mg/kg with 50cm ²)	Negative (< 0.02)

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg
ND = Not detected
< = Less than
mg/kg with 50cm² = milligram per kilogram with 50 square centimetre
Negative = A negative test result indicated positive observation
was not found at the time of Test.

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

Date Sample Received : Jul 27, 2011

Test Period : Jul 28, 2011 To Aug 02, 2011

(II) RoHS Requirement:

<u>Restricted Substances</u>	<u>Limits</u>
Cadmium (Cd) Content	0.01% (100ppm)
Lead (Pb) Content	0.1% (1000ppm)
Mercury (Hg) Content	0.1% (1000ppm)
Chromium VI (Cr ⁶⁺) Content	0.1% (1000ppm)

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

Number : TWNC00217925

Test Conducted

(III) Test Method:

<u>Test Item</u>	<u>Test 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 B, by boiling water extraction and determined by UV-Vis spectrophotometer.	0.02 mg/kg with 50cm ²

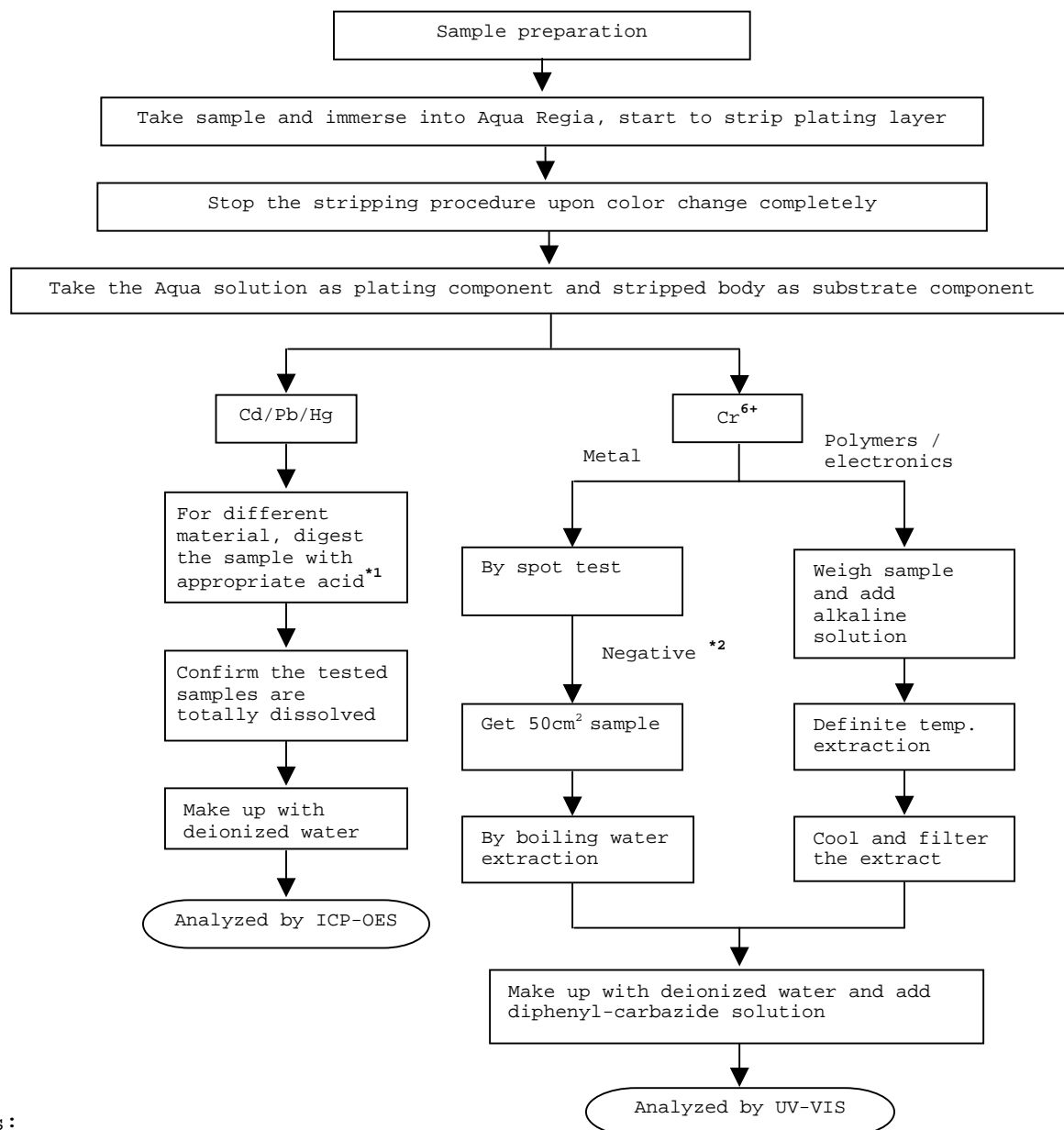
Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

Test for Cd/Pb/Hg/Chromium (VI)

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

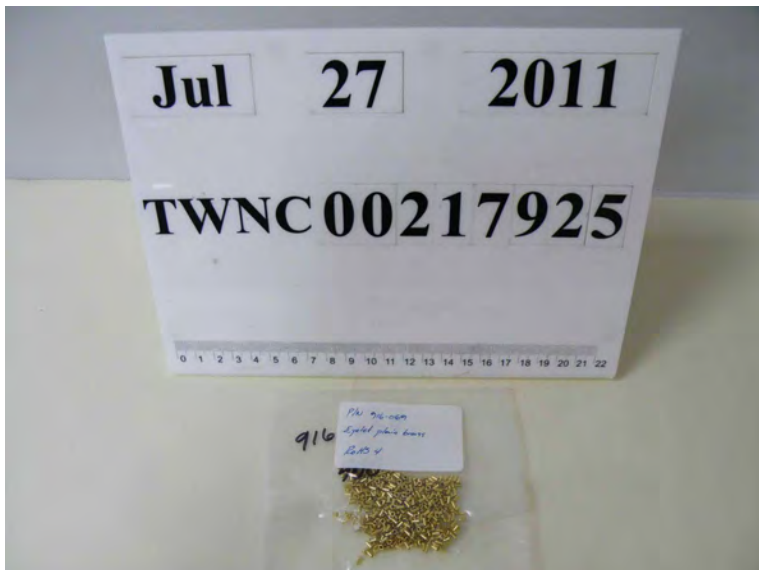
*2: If the result of spot test is positive, Chromium VI would be determined as detected.

End of Report

Test Conducted

Number : TWNC00217925

Photo





Test Report

Number : TWNC00216202

Applicant: Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martinez #1800
Col. Magisterio Seccion 38 C.P.
26070 Piedra Negras, Coahuila,
Mexico

Date : Jul 18, 2011

Sample Description:

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

Part Description : Filler
Part Number : 090190
Date Sample Received : Jul 14, 2011
Date Test Started : Jul 14, 2011

Test Conducted :

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

Authorized By:

On Behalf Of Intertek Testing Services
Taiwan Limited



K. Y. Liang
Director

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Number : TWNC00216202

Test Conducted

(I) Test Result Summary :

Test Item	Result (ppm)
	Light Beige Powder
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 based on weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Jul 14, 2011

Test Period : Jul 14, 2011 To Jul 18, 2011

Test 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 Ehters (PBDEs)	0.1% (1000ppm)

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

(III) Test Method:

<u>Test Item</u>	<u>Test 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

Test Conducted

(III) Test Method:

<u>Test Item</u>	<u>Test Method</u>	<u>Reporting Limit</u>
Polybrominated Biphenyls (PBBs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	5 ppm
Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	5 ppm
Halogen Content	With reference to EN 14582:2007 by calorimetric bomb with oxygen and determined by ion chromatography	50 ppm

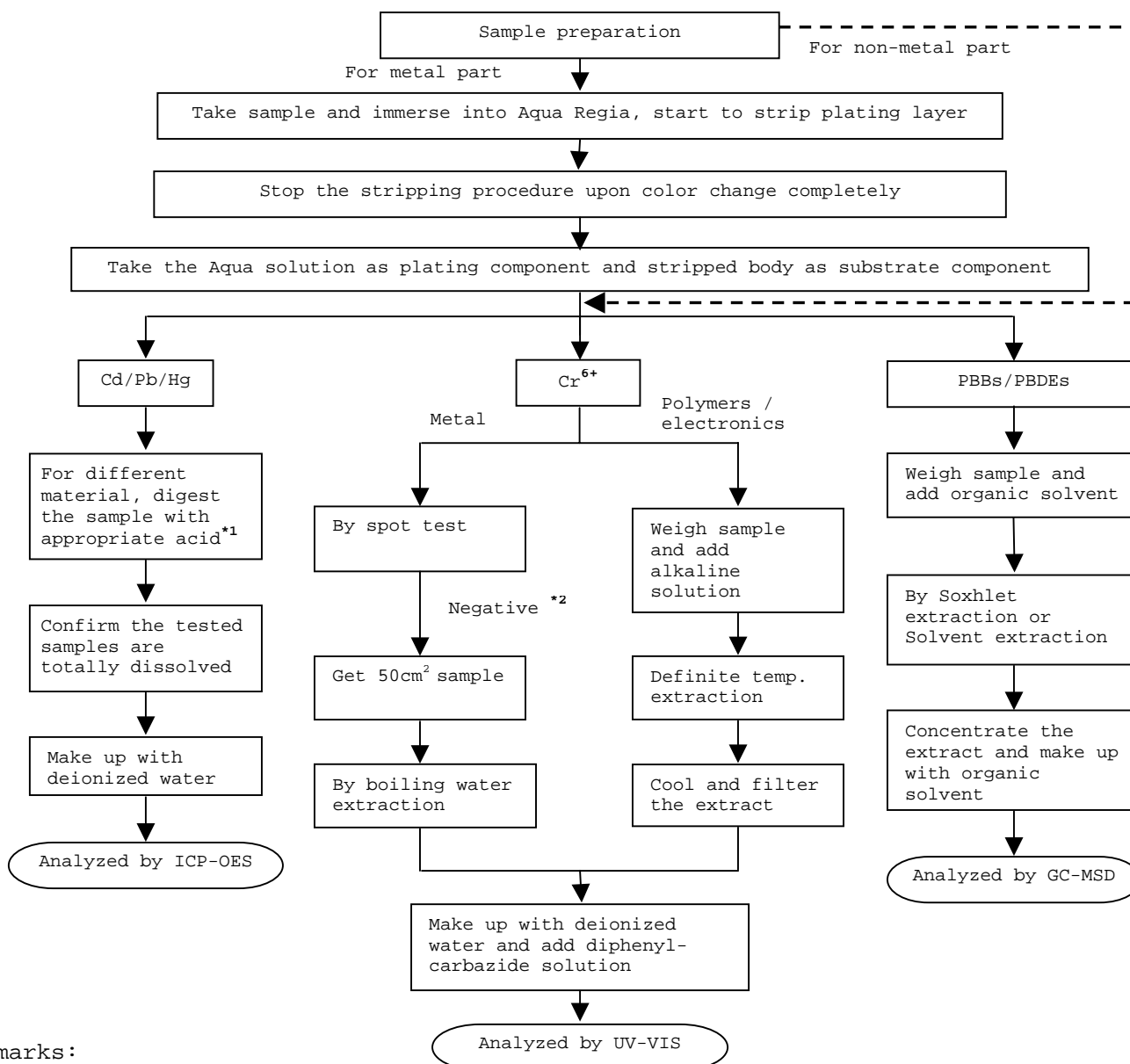
Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

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

Reference Standard: IEC 62321 edition 1.0:2008



Remarks:

*1: List Of Appropriate Acid:

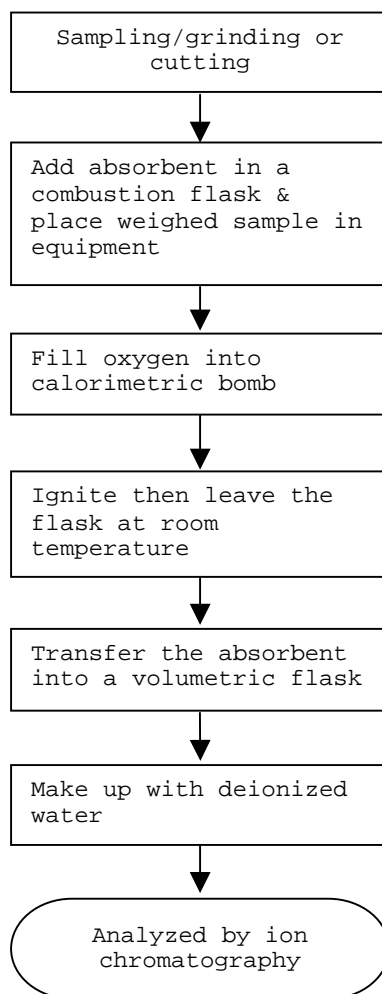
Material	Acid Added For Digestion
Polymers	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
Metals	HNO ₃ , HCl, HF
Electronics	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

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

Test Conducted

(IV) Measurement Flowchart:

Test For Halogen Content
Reference Standard : EN 14582

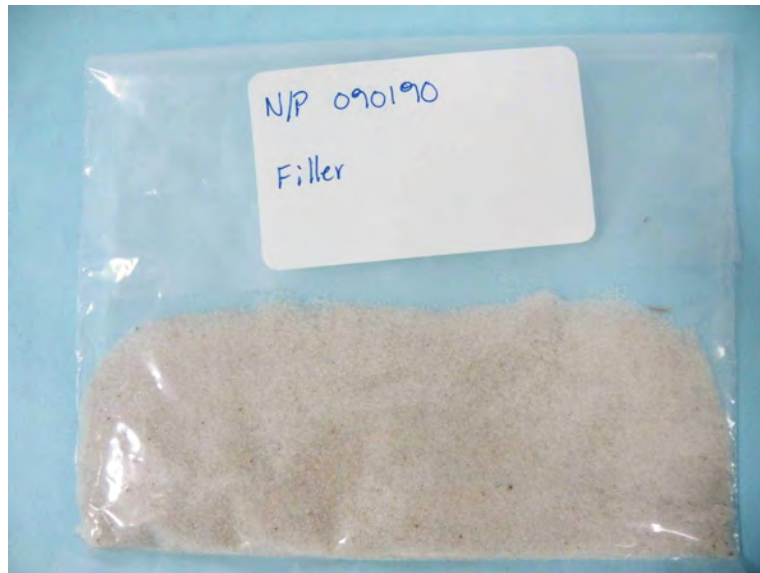
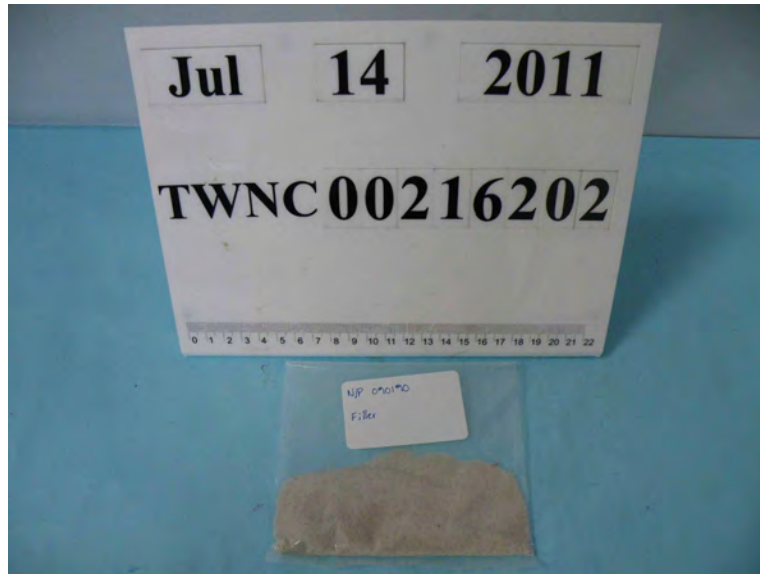


End of Report

Number : TWNC00216202

Test Conducted

Photo





Test Report

Number : TWNC00237703

Applicant: Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martinez #1800
Col. Magisterio Seccion 38 C.P.
26070 Piedra Negras, Coahuila,
Mexico

Date : Dec 27, 2011

Sample Description:

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

Part Description : SOLDER PASTE

Part Number : 195171

Date Sample Received : Dec 20, 2011

Date Test Started : Dec 20, 2011

Test Conducted :

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

Authorized By:

On Behalf Of Intertek Testing Services
Taiwan Limited



K. Y. Liang
Director

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Number : TWNC00237703

Test Conducted

(I) Test Result Summary :

Test Item	Result (ppm)
	Grey Paste
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	967061
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
Phthalates	
Di(2-ethylhexyl) Phthalate (DEHP)	ND
Dibutyl Phthalate (DBP)	ND
Benzyl Butyl Phthalate (BBP)	ND
Others	
Hexabromocyclododecane (HBCDD)	ND

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

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

Date Sample Received : Dec 20, 2011

Test Period : Dec 20, 2011 To Dec 27, 2011

Test 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 Ehters (PBDEs)	0.1% (1000ppm)

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

(III) Test Method:

<u>Test Item</u>	<u>Test 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-MS and further HPLC-DAD confirmation when necessary.	5 ppm

Number : TWNC00237703

Test Conducted

(III) Test Method:

<u>Test Item</u>	<u>Test Method</u>	<u>Reporting Limit</u>
Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary.	5 ppm
Halogen Content	With reference to EN 14582:2007 by calorimetric bomb with oxygen and determined by Ion Chromatograph.	50 ppm
Phthalates	With reference to EN 14372: 2004, by solvent extraction and determined by GC-MSD	50 ppm
Hexabromocyclododecane (HBCDD)	With reference to USEPA 3540C, by solvent extraction and determined by GC-MSD	10 ppm

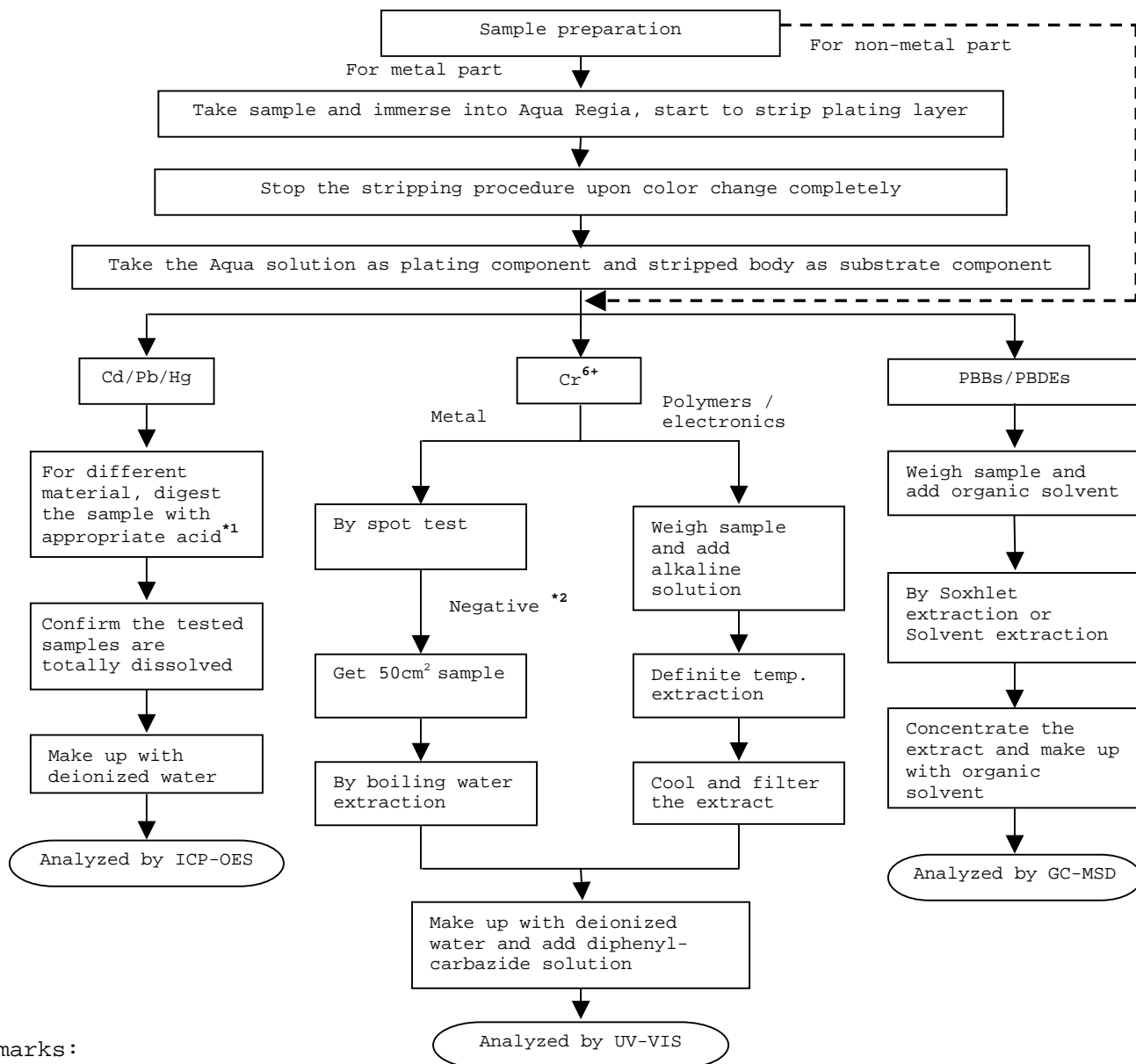
Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

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

Reference Standard: IEC 62321 edition 1.0:2008



Remarks:

*1: List of Appropriate Acid:

Material	Acid Added for Digestion
Polymers	HNO 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

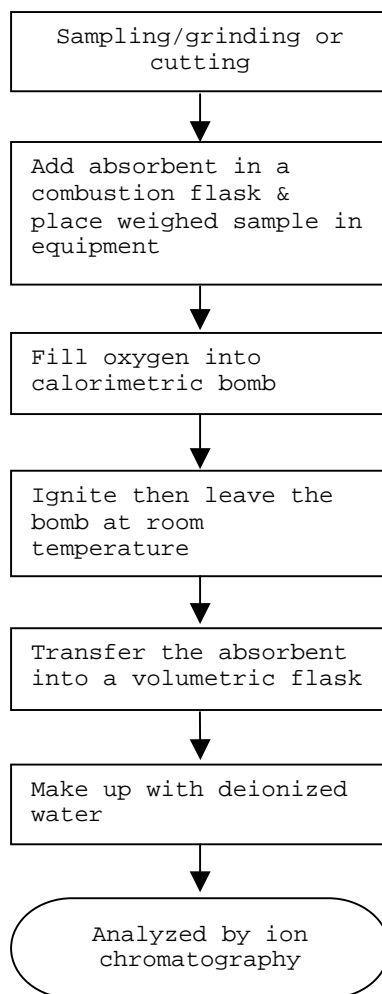
*2: If the result of spot test is positive, Chromium VI would be determined as detected.

Test Conducted

(IV) Measurement Flowchart:

Test for Halogen Content

Reference Standard : EN 14582

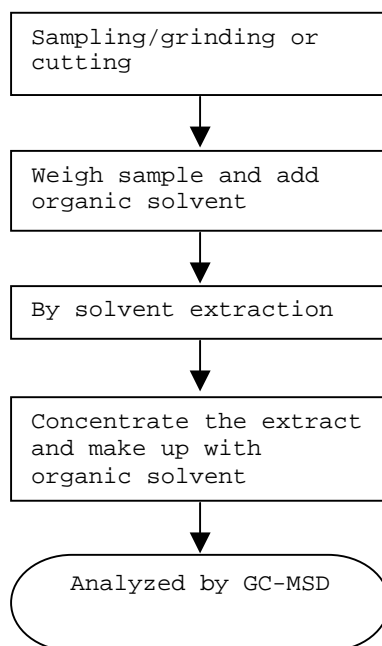


Test Conducted

(IV) Measurement Flowchart:

Test For Phthalates Contents

Reference Method: EN 14372: 2004

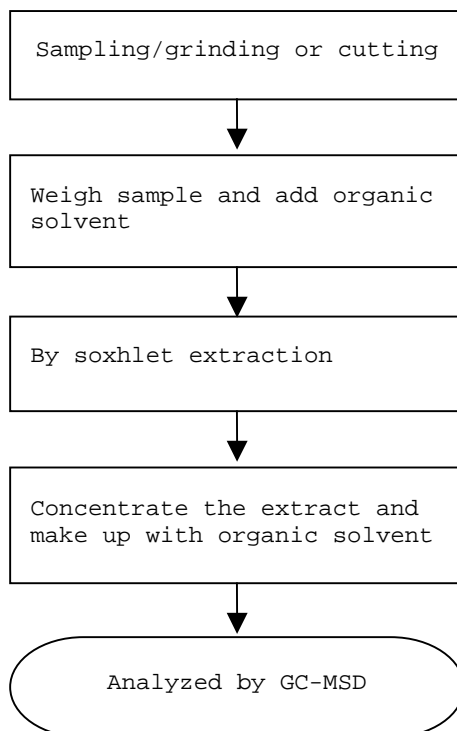


Test Conducted

(IV) Measurement Flowchart:

Test For Hexabromocyclododecane (HBCDD)

Reference Standard : USEPA 3540C



End of Report

Test Conducted

Number : TWNC00237703

Photo

