ICP Test Report Certification Packet

Company name: Littelfuse, Inc.

Product Series: 297

Product #: 297 Series

Issue Date: April 25, 2013

It is hereby certified by Littelfuse, Inc. that there is neither RoHS (2011/65/EU – recast of EU Directive 2002/95/EC, 2011/65/EU)-restricted substance nor such use, for materials to be used for unit parts, for packing/packaging materials, and for additives and the like in the manufacturing processes.
In addition, it is hereby reported to you that the parts and sub-materials, the materials to be used for unit parts, the packing/packaging materials, and the additives and the like in the manufacturing processes, are all composed of the following components.

Issued by: JENNY DINGLASAN

<Global EHS Specialist>

(1) Parts, sub-materials and unit parts

This document covers the 297 series 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 identifed in Table 1

Remarks :

Table 1: List of Raw Materials covered by this report

Total Parts	Raw Material Part Number	Raw Material Description	Page(s)
1	955408-1xx/ 955410	Zinc Strip	3-8
2	057880	Blue Colorant	9-18
3	087893	Cover Clear colorant	19-27
4	057786	Housing (Green)	28-36
	425498	White Foil	37-45
5	057875	Housing	46-54
7	425711	Hot Stamp Foil	55-63
8	057877	Tan Colorant	64-72
9	057876	Housing colorant	73-81
10	057878	Brown Colorant	82-90
11	057879	Red Colorant	91-99
12	057881	Yellow Colorant	100-108
13	057874	Gray Colorant	109-118
14	057357	Base Molding Resin	119-128
15	057883	Green Colorant	129-137

Test Report Number : TWNC00281445

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

Date : Oct 23, 2012

Sample Description:
One (1) group of submitted samples said to be :
Part Description : MINI SKIVED ZINC STRIP 5A
Part Number : 955408-108
Date Sample Received : Oct 16, 2012
Date Test Started : Oct 18, 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

Intertek Testing Services Taiwan Ltd.
8F., No. 423, Ruiguang Rd., Neihu District, Taipei 114, Taiwan, R.O.C.
全國公證檢驗股份有限公司
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Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2410

Number : TWNC00281445

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)	
	(1)	(2)
Heavy Metal		
Cadmium (Cd) content	2	3
Lead (Pb) content	14	109
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 $50cm^2$ = 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 cm^2 was used and the dilution factor was adjusted accordingly.

Tested Components
(1)Black Metal Base Material
(2)Silvery Plating Layer

Responsibility of Chemist : Irene Chiou / Kevin Liu

Date Sample Received : Oct 16, 2012
Test Period : Oct 18, 2012 To Oct 23, 2012

(Ⅱ) RoHS Limits:

Restricted Substances	Limits
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 Annex II of 2011/65/EU for homogeneous material.

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Number : TWNC00281445

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

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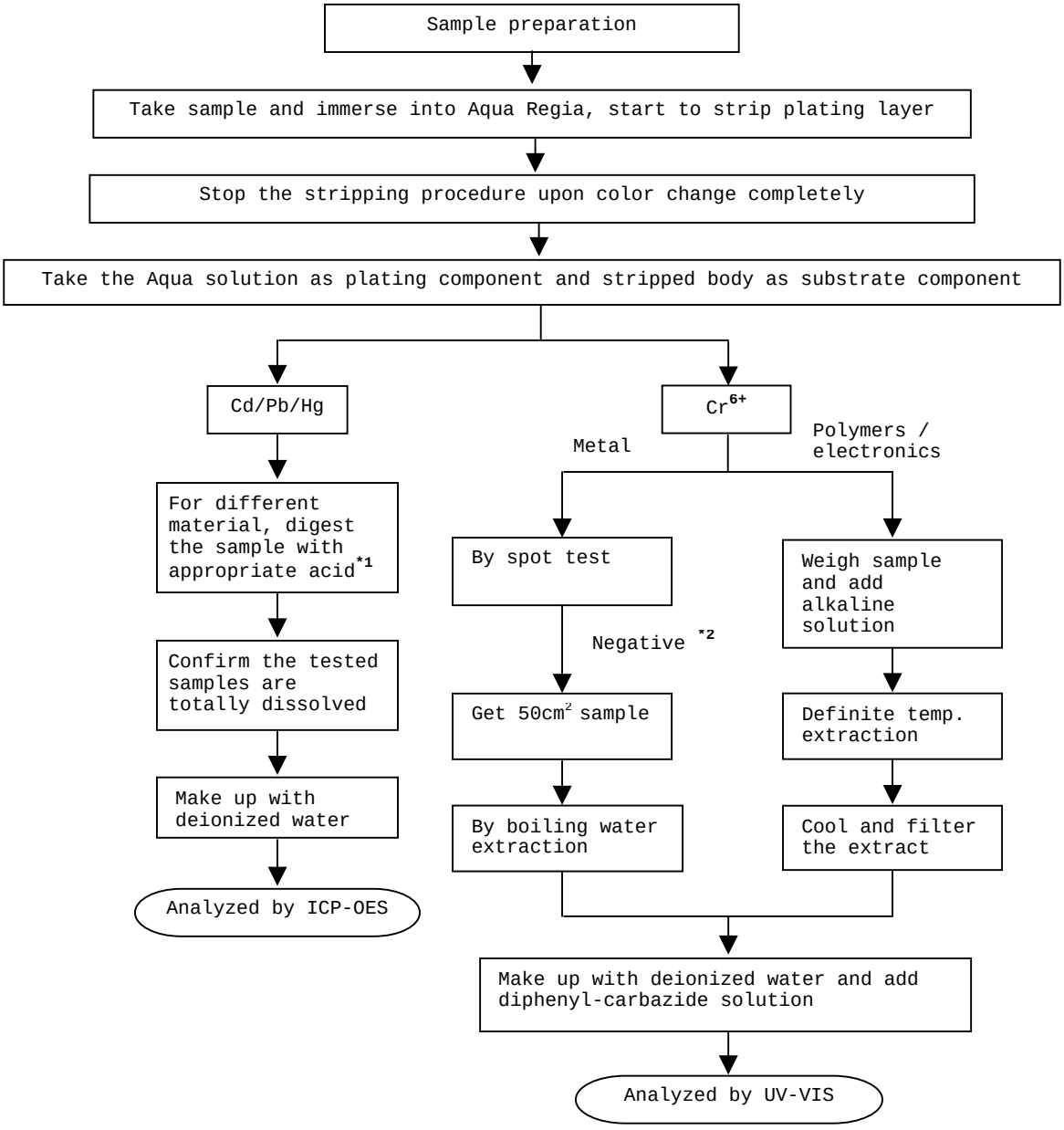
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Cd/Pb/Hg/Chromium (VI)
Reference Standard：IEC 62321 edition 1.0:2008



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Number : TWNC00281445

Test Conducted

Remarks:
*1: List of Appropriate Acid：

Material	Acid Added for Digestion
Polymers	HNO_3, HCl, HF, H_2O_2, H_3BO_3
Metals	HNO_3, HCl, HF
Electronics	HNO_3, HCl, H_2O_2, HBF_4

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

End of Report

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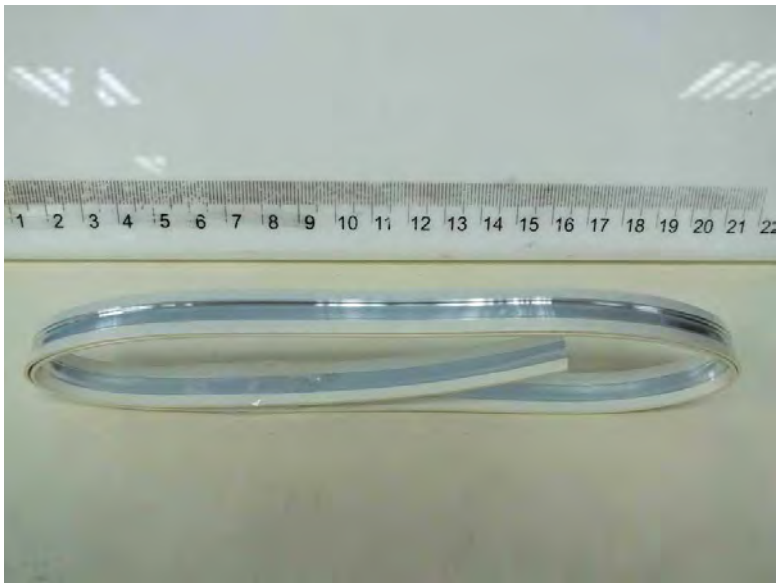
Number : TWNC00281445

Test Conducted

Photo



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Test Report Number : TWNC00299231

Applicant: Littelfuse, S.A. de C.V. Date : Feb 25, 2013
Blvd. Fausto Z. Martinez #1800
Col. Magisterio Seccion 38 C.P.
26070 Piedra Negras, Coahuila, Mexico

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

Part Description	:	Color concentrate blue
Part Number	:	057880
Date Sample Received	:	Feb 19, 2013
Date Test Started	:	Feb 19, 2013

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

Authorized by:
On Behalf of Intertek Testing Services
Taiwan Limited

INTERTEK TESTING SERVICES TAIWAN LTD.

K. Y. Liang
Director

Intertek Testing Services Taiwan Ltd.
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Number : TWNC00299231

Test Conducted

(Ⅰ) Test Result Summary:

Test Item	Unit	Test Method	Result	RL
			Blue plastic pellets	
Heavy Metal				
Cadmium (Cd) Content	ppm	With reference to IEC 62321: 2008, by microwave digestion and determined by ICP-OES.	ND	2
Lead (Pb) Content	ppm	With reference to IEC 62321: 2008, by microwave digestion and determined by ICP-OES.	ND	2
Mercury (Hg) Content	ppm	With reference to IEC 62321: 2008, by microwave digestion and determined by ICP-OES.	ND	2
Chromium VI (Cr^{6+}) Content	ppm	With reference to IEC 62321: 2008, by alkaline digestion and determined by UV-Vis Spectrophotometer.	ND	1
Polybrominated Biphenyls (PBBs)				
Monobrominated Biphenyls (MonoBB)	ppm	With reference to IEC 62321: 2008, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary.	ND	5
Dibrominated Biphenyls (DiBB)	ppm		ND	5
Tribrominated Biphenyls (TriBB)	ppm		ND	5
Tetrabrominated Biphenyls (TetraBB)	ppm		ND	5
Pentabrominated Biphenyls (PentaBB)	ppm		ND	5
Hexabrominated Biphenyls (HexaBB)	ppm		ND	5
Heptabrominated Biphenyls (HeptaBB)	ppm		ND	5
Octabrominated Biphenyls (OctaBB)	ppm		ND	5
Nonabrominated Biphenyls (NonaBB)	ppm		ND	5
Decabrominated Biphenyl (DecaBB)	ppm		ND	5

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Number : TWNC00299231

Test Conducted

Test Item	Unit	Test Method	Result	RL
			Blue plastic pellets	
Polybrominated Diphenyl Ethers (PBDEs)				
Monobrominated Diphenyl Ethers (MonoBDE)	ppm	With reference to IEC 62321: 2008, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary.	ND	5
Dibrominated Diphenyl Ethers (DiBDE)	ppm		ND	5
Tribrominated Diphenyl Ethers (TriBDE)	ppm		ND	5
Tetrabrominated Diphenyl Ethers (TetraBDE)	ppm		ND	5
Pentabrominated Diphenyl Ethers (PentaBDE)	ppm		ND	5
Hexabrominated Diphenyl Ethers (HexaBDE)	ppm		ND	5
Heptabrominated Diphenyl Ethers (HeptaBDE)	ppm		ND	5
Octabrominated Diphenyl Ethers (OctaBDE)	ppm		ND	5
Nonabrominated Diphenyl Ethers (NonaBDE)	ppm		ND	5
Decabrominated Diphenyl Ether (DecaBDE)	ppm		ND	5
Phthalates				
Di(2-ethylhexyl) Phthalate (DEHP)	ppm	With reference to EN 14372: 2004, by solvent extraction and determined by GC-MS.	ND	50
Dibutyl Phthalate (DBP)	ppm		ND	50
Benzyl Butyl Phthalate (BBP)	ppm		ND	50
Halogen Content				
Fluorine (F)	ppm	With reference to EN 14582:2007 by calorimetric bomb with oxygen and determined by Ion Chromatograph.	ND	50
Chlorine (Cl)	ppm		ND	50
Bromine (Br)	ppm		ND	50
Iodine (I)	ppm		ND	50
Others				
Hexabromo cyclododecane (HBCDD)	ppm	With reference to USEPA 3540C, by solvent extraction and determined by GC-MS.	ND	10

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Number : TWNC00299231

Test Conducted

Remarks: ppm = parts per million based on weight of tested sample = mg/kg
ND = Not detected
RL = Reporting Limit, Quantitation limit of analyte in sample

Responsibility of Chemist: Kevin Liu/ Irene Chiou/ Vico Lin

Date Sample Received : Feb 19, 2013
Test Period : Feb 19, 2013 to Feb 21, 2013

(Ⅱ) Limit:
RoHS Limit

Restricted Substances	**Limits**
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 Annex II of 2011/65/EU for homogeneous material.

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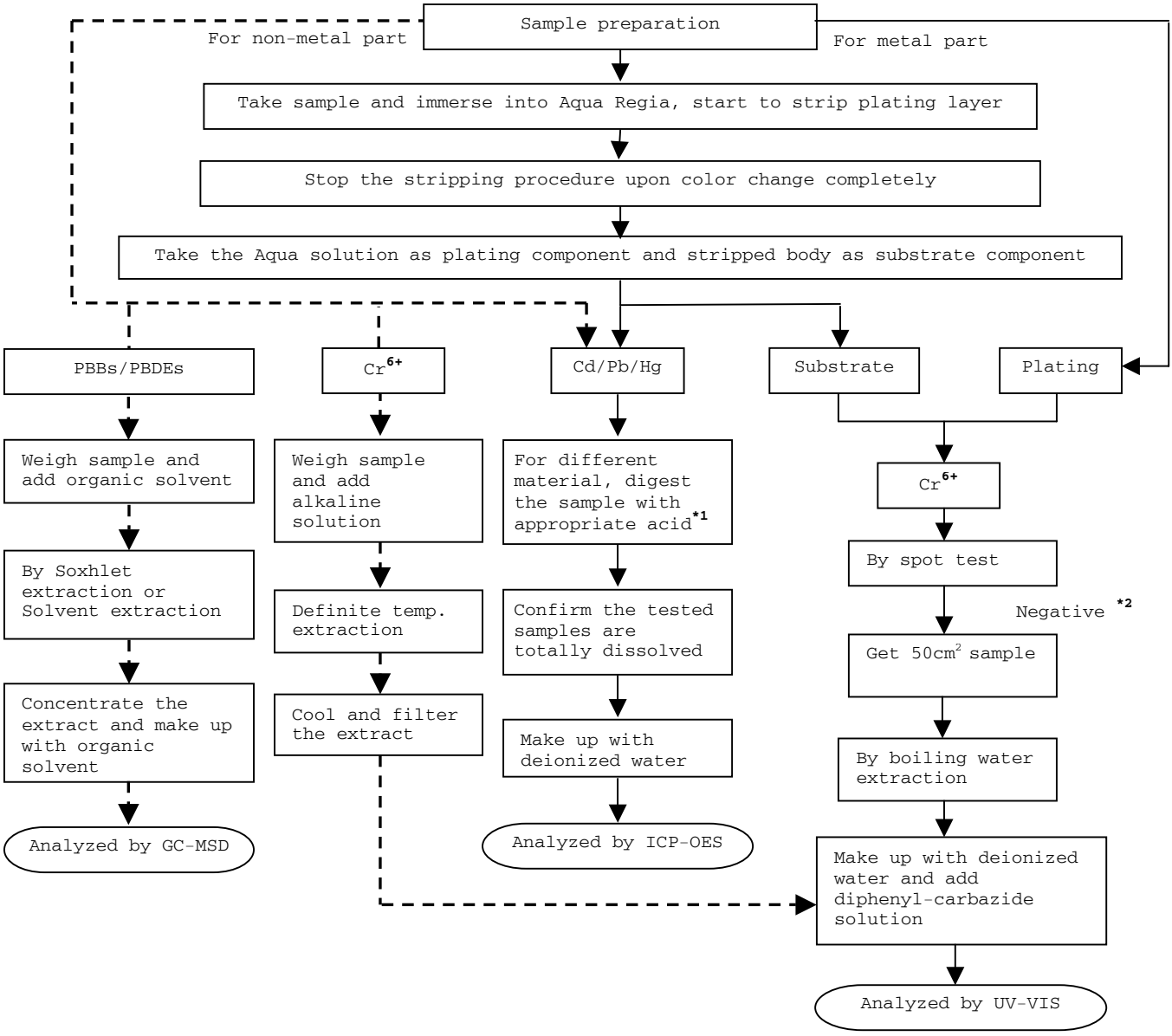
Number : TWNC00299231

Test Conducted

(Ⅳ) Measurement Flowchart:

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

Reference Standard: IEC 62321 edition 1.0:2008



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Number : TWNC00299231

Test Conducted

Remarks:
*1: List of Appropriate Acid：

Material	Acid Added for Digestion
Polymers	HNO_3,HCl,HF,H_2O_2,H_3BO_3
Metals	HNO_3,HCl,HF
Electronics	HNO_3,HCl,H_2O_2,HBF_4

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

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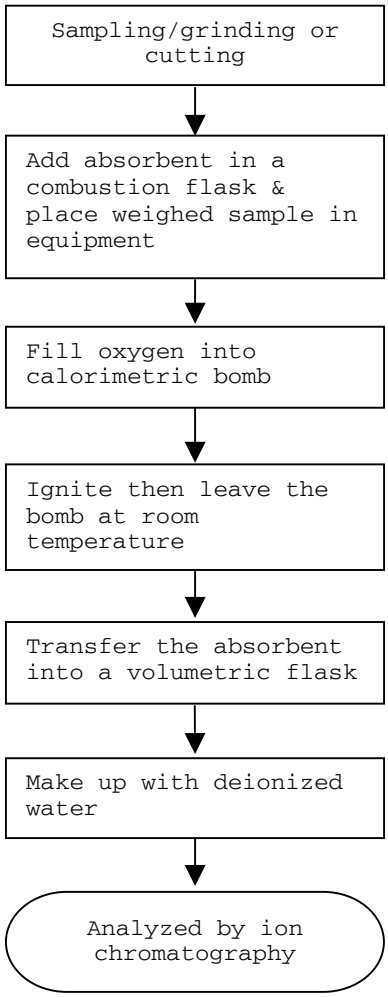
Number : TWNC00299231

Test Conducted

Test for Halogen Content
Reference Standard：EN 14582



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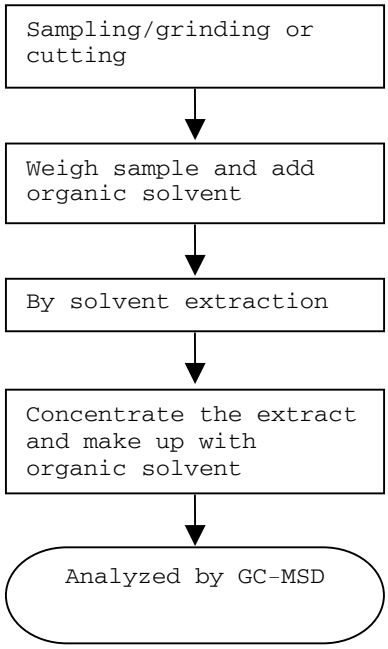
Number : TWNC00299231

Test Conducted

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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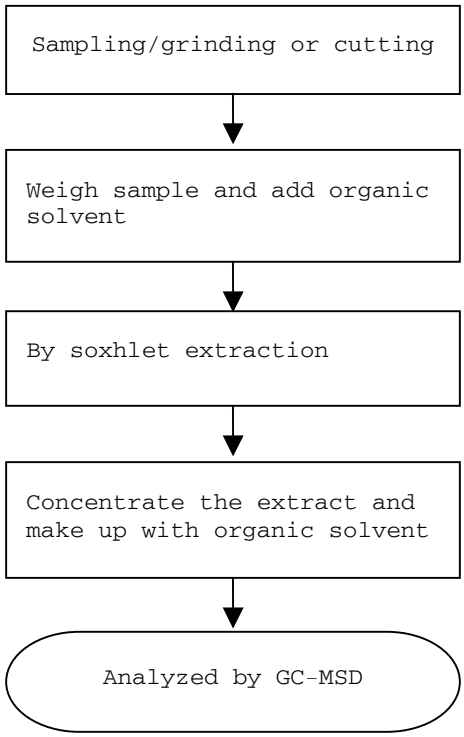
Number : TWNC00299231

Test Conducted

Test For Hexabromocyclododecane (HBCDD)
Reference Standard：USEPA 3540C



End of Report

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Number : TWNC00299231

Test Conducted

Photo

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Test Report Number : TWNC00265152

Applicant: Littelfuse Philippines Inc. Date : Jul 06, 2012
LIMA Technology Center, Lipa City,
Malvar, Batangas

Sample Description:
One (1) group of submitted samples said to be :
Part Description : COVER CLEAR COLORANT
Part Number : 057893
Date Sample Received : Jul 02, 2012
Date Test Started : Jul 02, 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 : TWNC00265152

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm) Clear Yellow Plastic Pellets
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

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Number : TWNC00265152

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Clear Yellow Plastic Pellets
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 weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Jul 02, 2012
Test Period : Jul 02, 2012 To Jul 05, 2012

(Ⅱ) RoHS Requirement:

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

The above limits were quoted from Annex II of 2011/65/EU for homogeneous material.

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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 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
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-MS.	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

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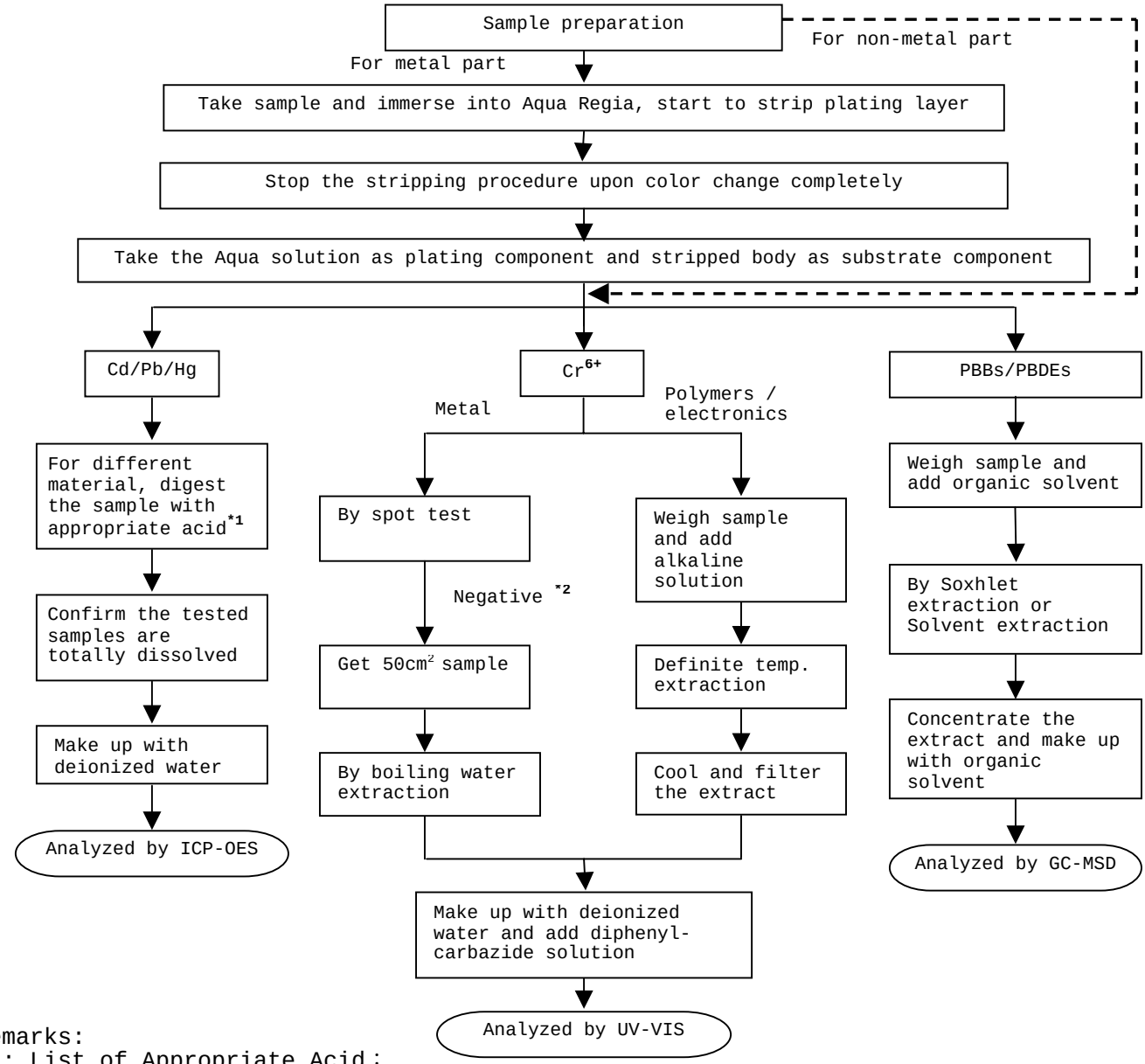
Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2410

Number : TWNC00265152

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	$HNO_3, HCl, HF, H_2O_2, H_3BO_3$
Metals	HNO_3, HCl, HF
Electronics	$HNO_3, HCl, H_2O_2, HBF_4$

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

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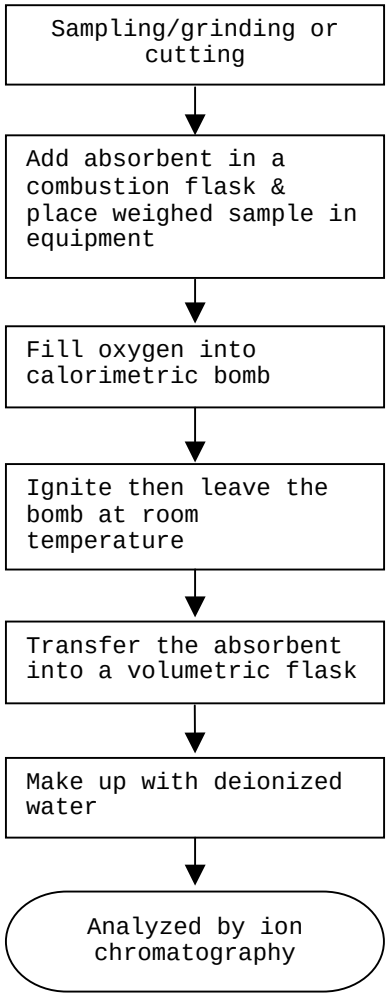
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content

Reference Standard：EN 14582



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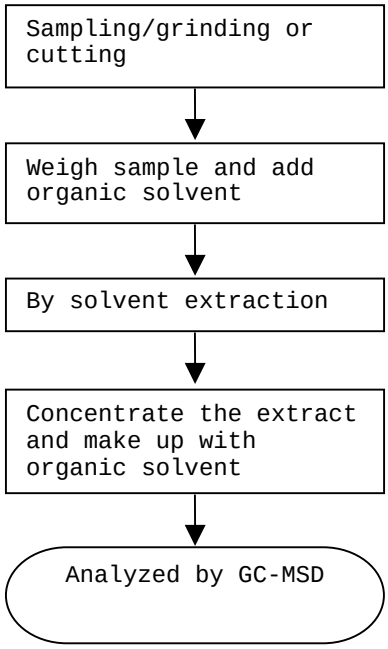
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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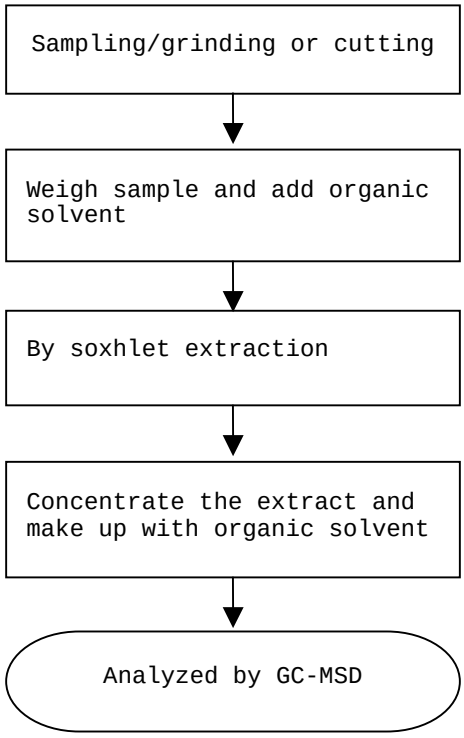
Number : TWNC00265152

Test Conducted

(Ⅳ) Measurement Flowchart:
Test For Hexabromocyclododecane (HBCDD)
Reference Standard：USEPA 3540C



End of Report

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Test Conducted

Photo

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Test Report Number : TWNC00265153

Applicant: Littelfuse Philippines Inc. Date : Jul 09, 2012
LIMA Technology Center, Lipa City,
Malvar, Batangas

Sample Description:
One (1) group of submitted samples said to be :
Part Description : HOUSING (GREEN)
Part Number : 057786
Date Sample Received : Jul 02, 2012
Date Test Started : Jul 02, 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 : TWNC00265153

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Green Plastic Pellets
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)	9543
Bromine (Br)	ND
Iodine (I)	ND

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Number : TWNC00265153

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Green Plastic Pellets
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 weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Jul 02, 2012
Test Period : Jul 02, 2012 To Jul 06, 2012

(Ⅱ) RoHS Requirement:

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

The above limits were quoted from Annex II of 2011/65/EU for homogeneous material.

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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 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
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-MS.	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

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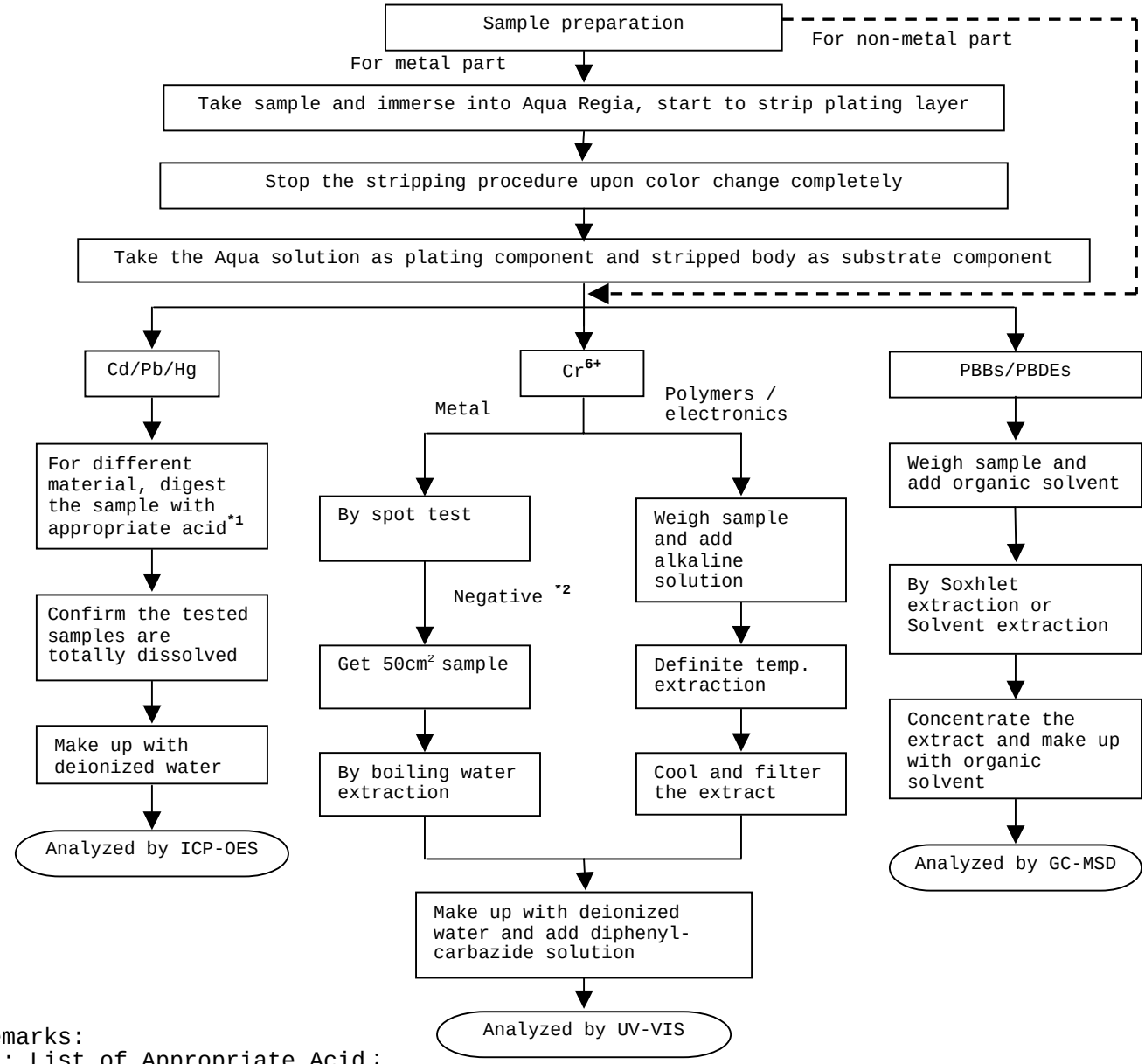
Number : TWNC00265153

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	$HNO_3, HCl, HF, H_2O_2, H_3BO_3$
Metals	HNO_3, HCl, HF
Electronics	$HNO_3, HCl, H_2O_2, HBF_4$

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

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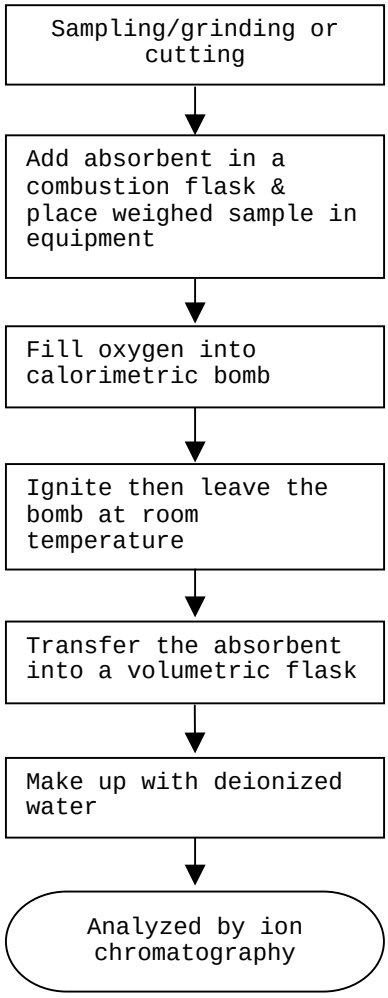
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content

Reference Standard：EN 14582



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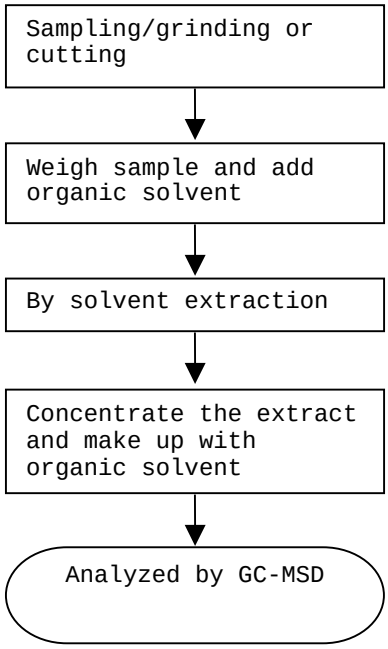
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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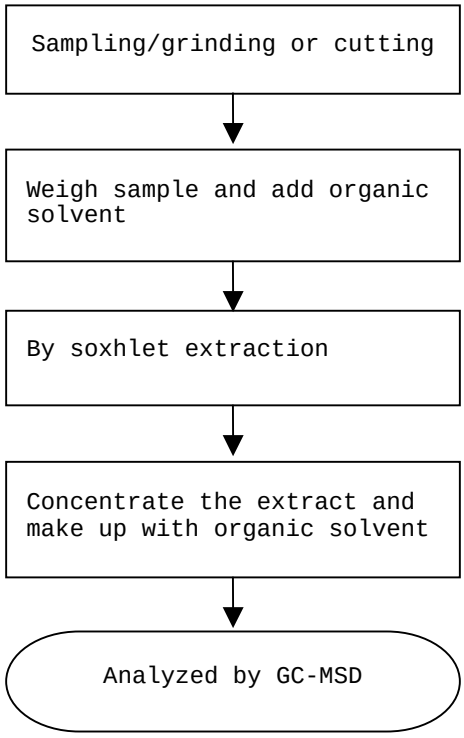
Number : TWNC00265153

Test Conducted

(Ⅳ) Measurement Flowchart:
Test For Hexabromocyclododecane (HBCDD)
Reference Standard：USEPA 3540C



End of Report

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Number : TWNC00265153

Test Conducted

Photo

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Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2410

Test Report Number : TWNC00281437

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

Date : Oct 23, 2012

Sample Description:
One (1) group of submitted samples said to be :
Part Description : TAPE WHITE FOIL
Part Number : 425498
Date Sample Received : Oct 16, 2012
Date Test Started : Oct 17, 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

Intertek Testing Services Taiwan Ltd.
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Number : TWNC00281437

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	White Plastic Film
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)	12260
Bromine (Br)	ND
Iodine (I)	ND

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Number : TWNC00281437

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	White Plastic Film
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 weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Oct 16, 2012
Test Period : Oct 17, 2012 To Oct 22, 2012

(Ⅱ) RoHS Limits:

Restricted Substances	Limits
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 Annex II of 2011/65/EU for homogeneous material.

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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 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
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-MS.	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

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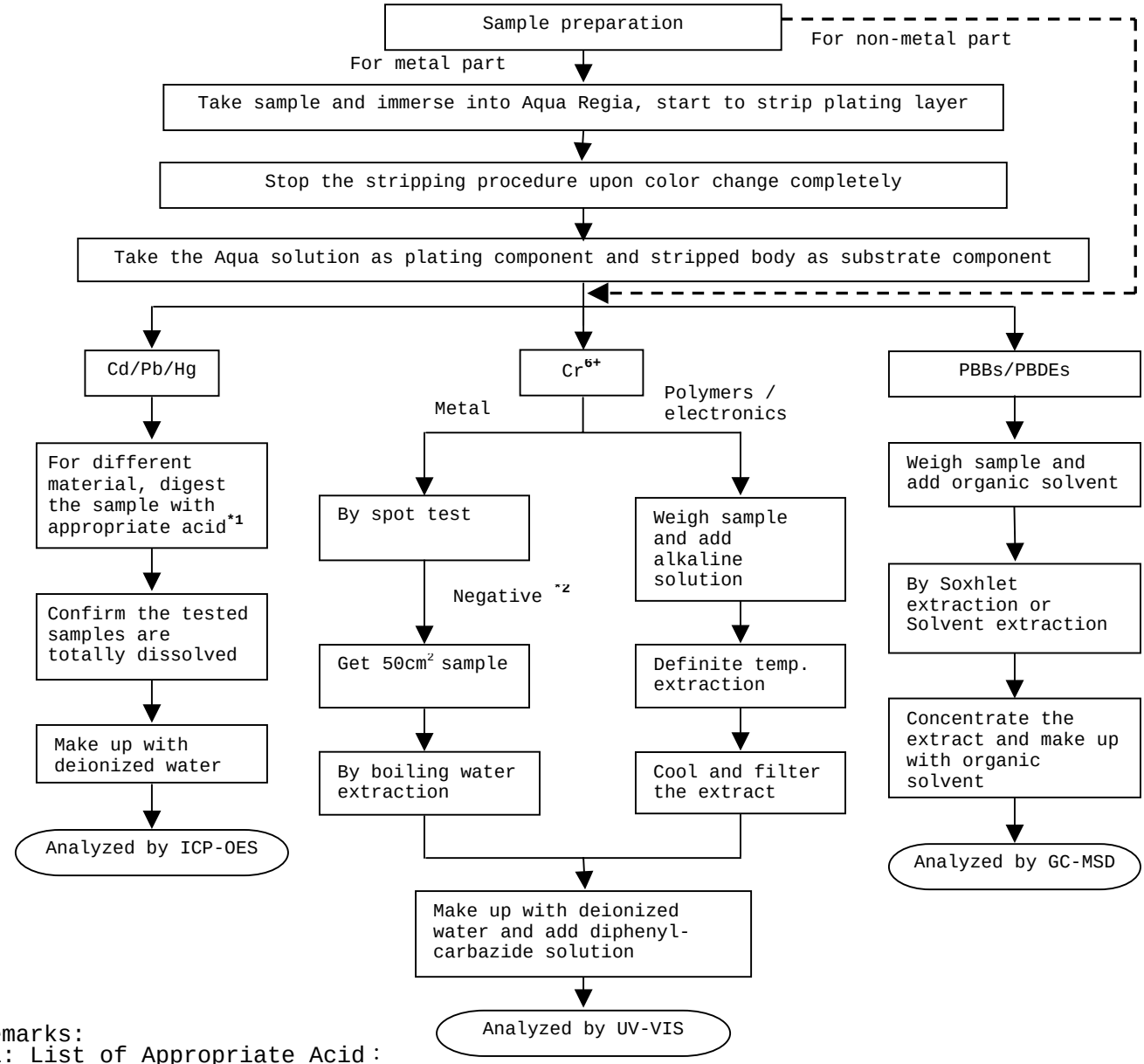
Test Conducted

(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_2O_2, H_3BO_3
Metals	HNO_3, HCl, HF
Electronics	HNO_3, HCl, H_2O_2, HBF_4

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

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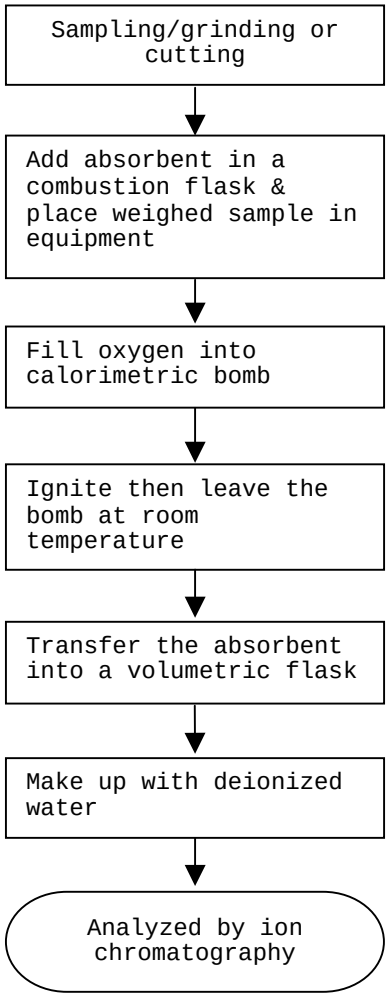
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content

Reference Standard：EN 14582



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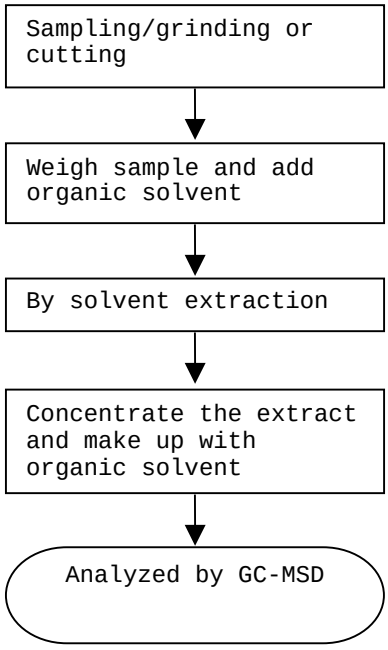
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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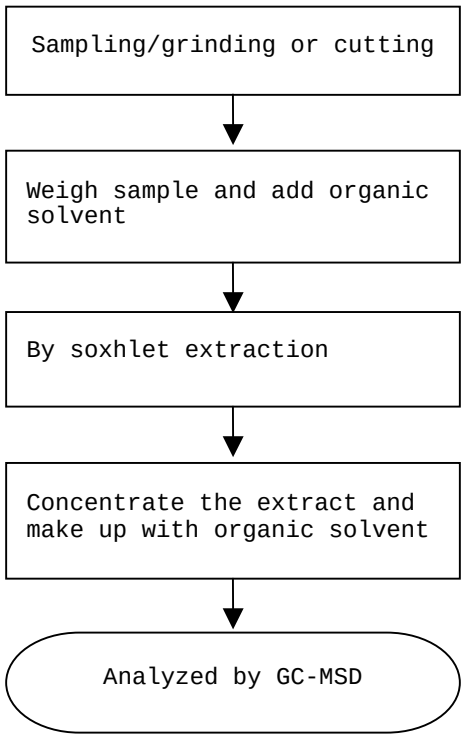
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Hexabromocyclododecane (HBCDD)

Reference Standard：USEPA 3540C



End of Report

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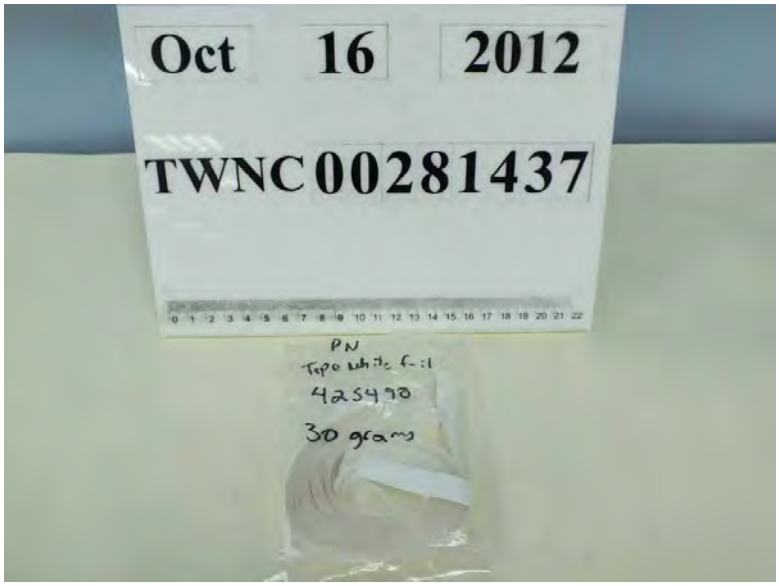
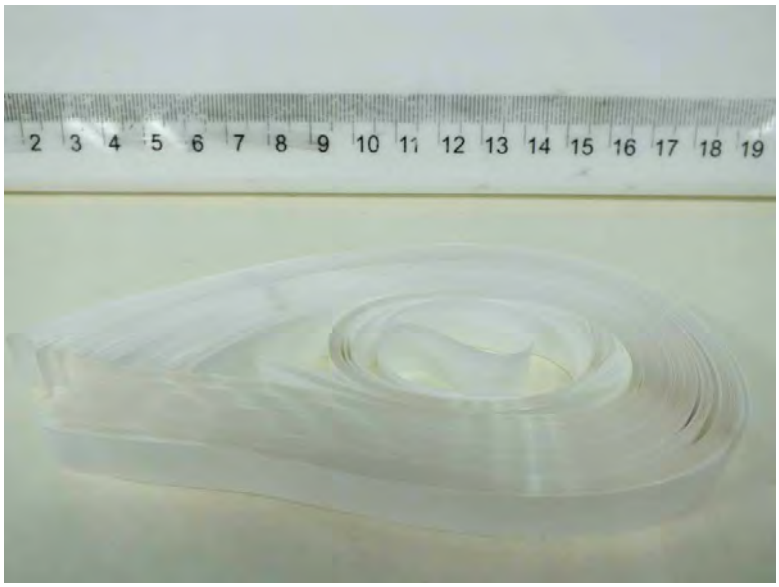
Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2410

Number : TWNC00281437

Test Conducted

Photo





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Test Report Number : TWNC00265154

Applicant: Littelfuse Philippines Inc. Date : Jul 06, 2012
LIMA Technology Center, Lipa City,
Malvar, Batangas

Sample Description:
One (1) group of submitted samples said to be :
Part Description : HOUSING
Part Number : 057875
Date Sample Received : Jul 02, 2012
Date Test Started : Jul 02, 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

Intertek Testing Services Taiwan Ltd.
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Number : TWNC00265154

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Brown Plastic Pellets
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

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Number : TWNC00265154

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Brown Plastic Pellets
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 weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Jul 02, 2012
Test Period : Jul 02, 2012 To Jul 05, 2012

(Ⅱ) RoHS Requirement:

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

The above limits were quoted from Annex II of 2011/65/EU for homogeneous material.

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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 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
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-MS.	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

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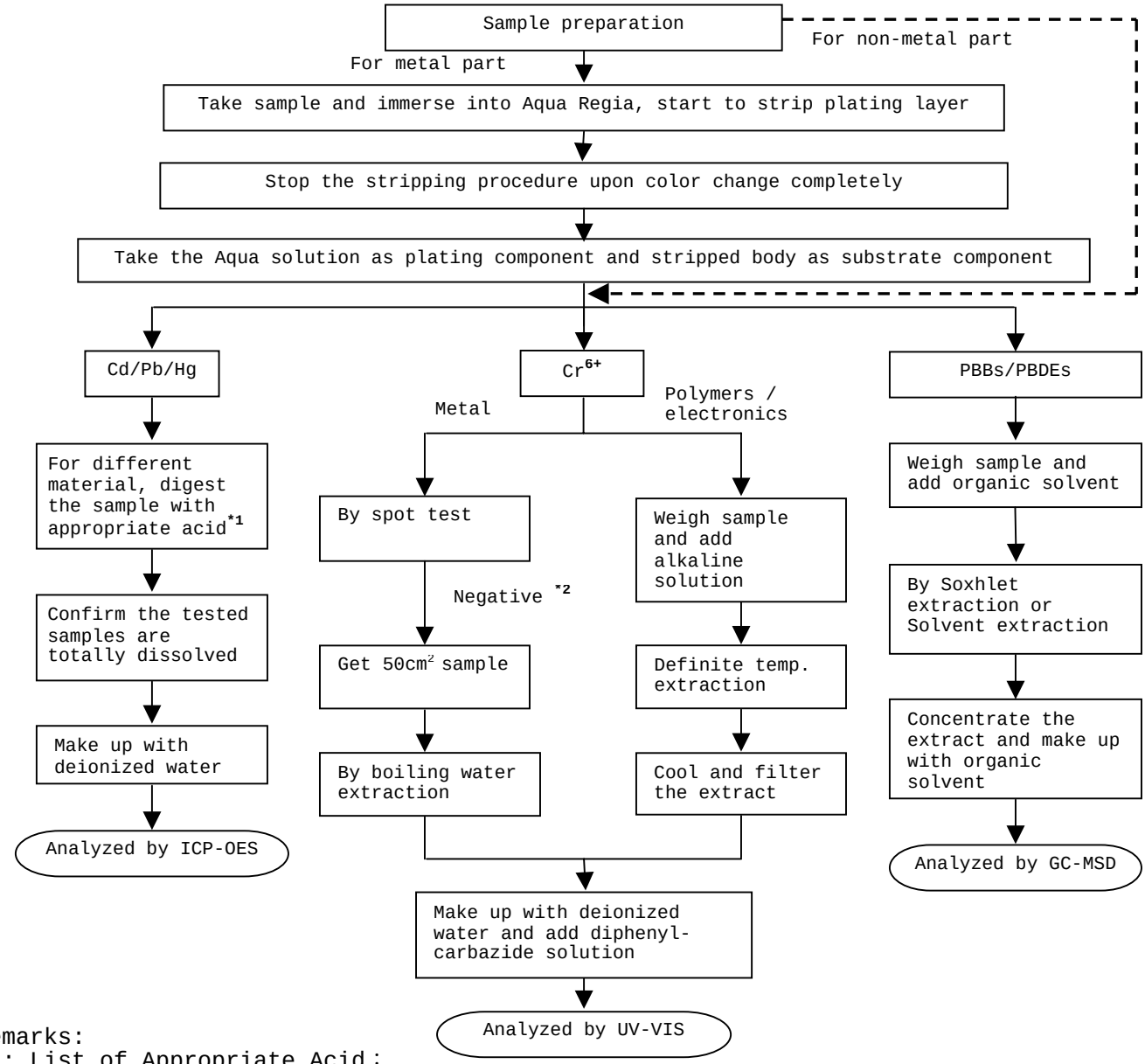
Number : TWNC00265154

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	$HNO_3, HCl, HF, H_2O_2, H_3BO_3$
Metals	HNO_3, HCl, HF
Electronics	$HNO_3, HCl, H_2O_2, HBF_4$

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

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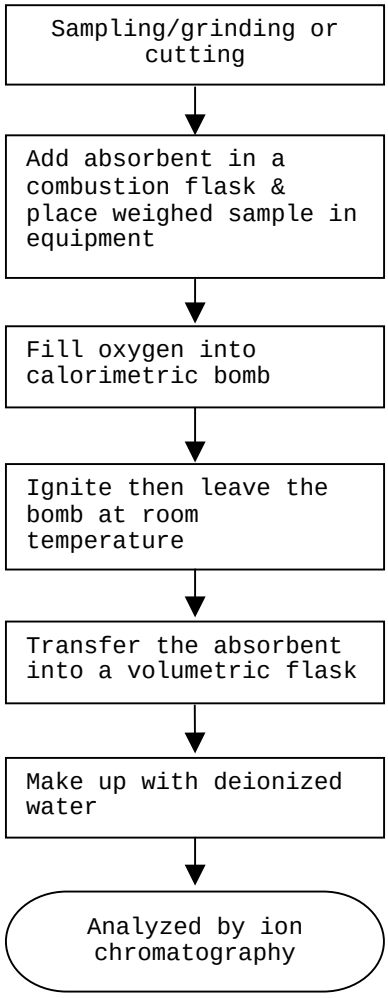
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content

Reference Standard：EN 14582



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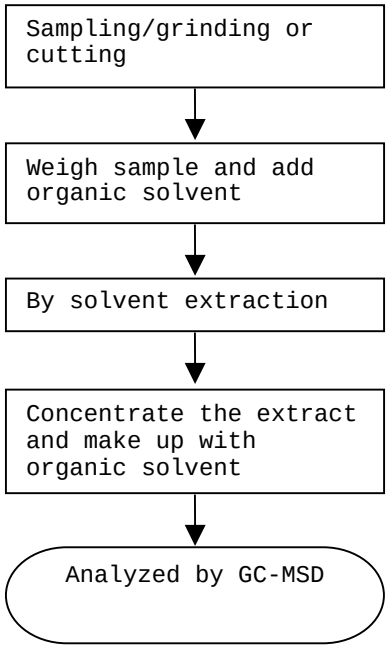
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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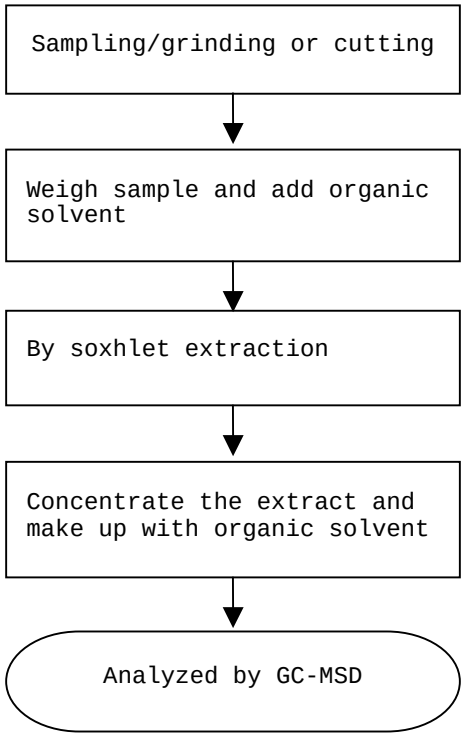
Number : TWNC00265154

Test Conducted

(Ⅳ) Measurement Flowchart:
Test For Hexabromocyclododecane (HBCDD)
Reference Standard：USEPA 3540C



End of Report

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Number : TWNC00265154

Test Conducted

Photo

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Test Report

Number : TWNC00281442

Date : Oct 23, 2012

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

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

Part Description	: RED FOIL
Part Number	: 425711
Date Sample Received	: Oct 16, 2012
Date Test Started	: Oct 17, 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

Intertek Testing Services Taiwan Ltd.
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Number : TWNC00281442

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Red Plastic Film
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)	1114
Chlorine (Cl)	11663
Bromine (Br)	ND
Iodine (I)	ND

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Number : TWNC00281442

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Red Plastic Film
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 weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Oct 16, 2012
Test Period : Oct 17, 2012 To Oct 22, 2012

(Ⅱ) RoHS Limits:

Restricted Substances	Limits
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 Annex II of 2011/65/EU for homogeneous material.

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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 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
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-MS.	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

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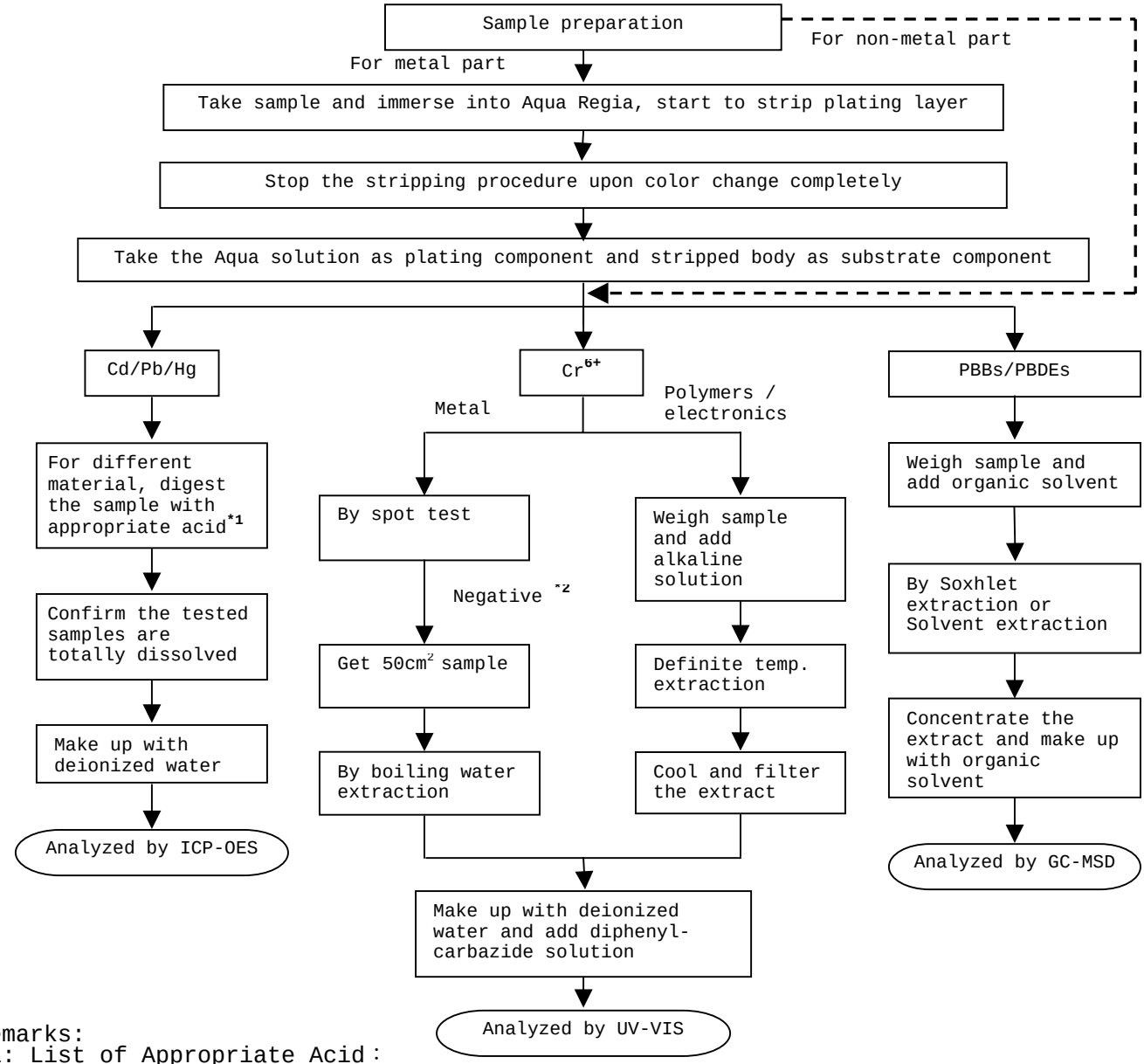
Test Conducted

(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_2O_2, H_3BO_3
Metals	HNO_3, HCl, HF
Electronics	HNO_3, HCl, H_2O_2, HBF_4

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

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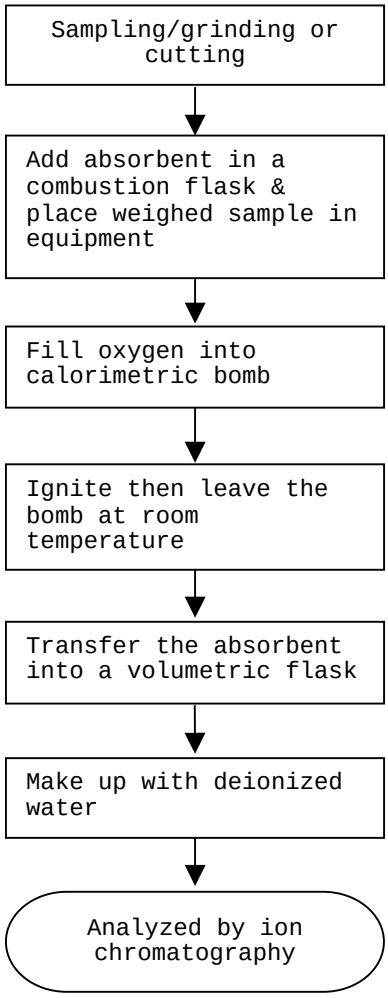
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content

Reference Standard：EN 14582



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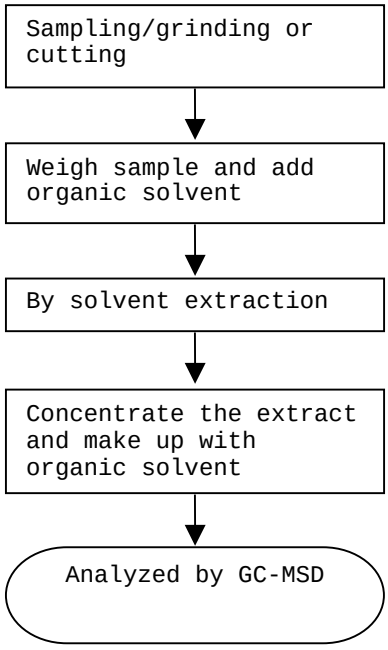
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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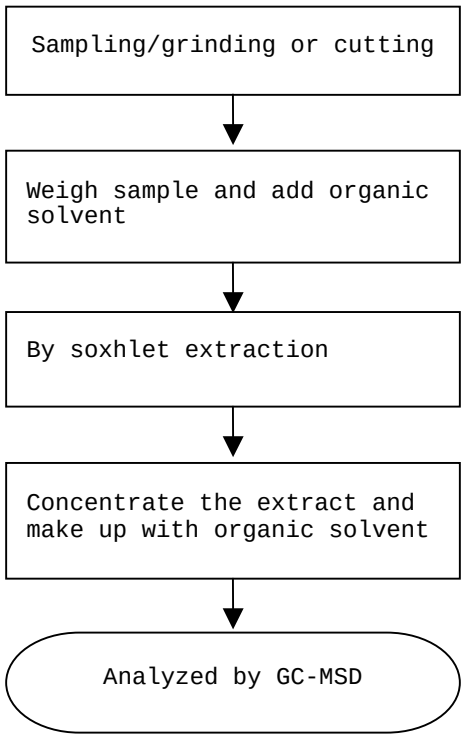
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Hexabromocyclododecane (HBCDD)

Reference Standard：USEPA 3540C



End of Report

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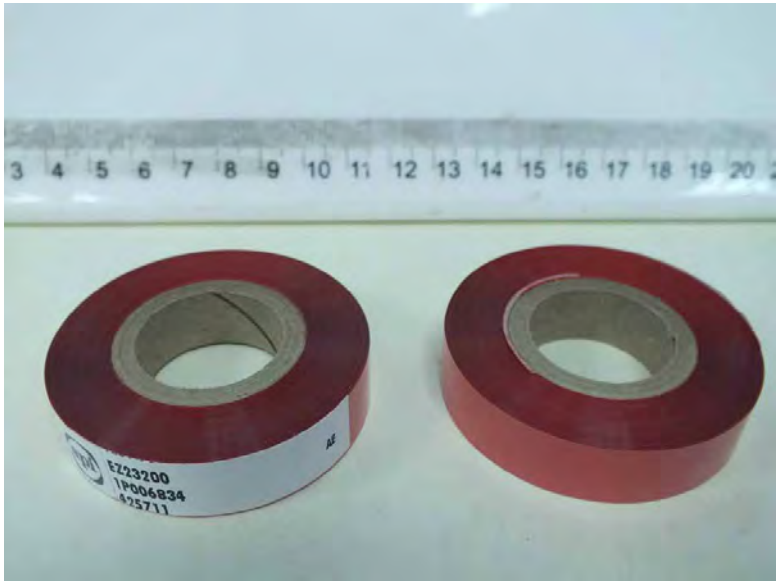
Number : TWNC00281442

Test Conducted

Photo



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Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2410

Test Report Number : TWNC00265155

Applicant: Littelfuse Philippines Inc. Date : Jul 06, 2012
LIMA Technology Center, Lipa City,
Malvar, Batangas

Sample Description:
One (1) group of submitted samples said to be :
Part Description : TAN COLORANT
Part Number : 057877
Date Sample Received : Jul 02, 2012
Date Test Started : Jul 02, 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

Intertek Testing Services Taiwan Ltd.
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Number : TWNC00265155

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Tan Plastic Pellets
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

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Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2410

Number : TWNC00265155

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Tan Plastic Pellets
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 weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Jul 02, 2012
Test Period : Jul 02, 2012 To Jul 05, 2012

(Ⅱ) RoHS Requirement:

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

The above limits were quoted from Annex II of 2011/65/EU for homogeneous material.

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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 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
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-MS.	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

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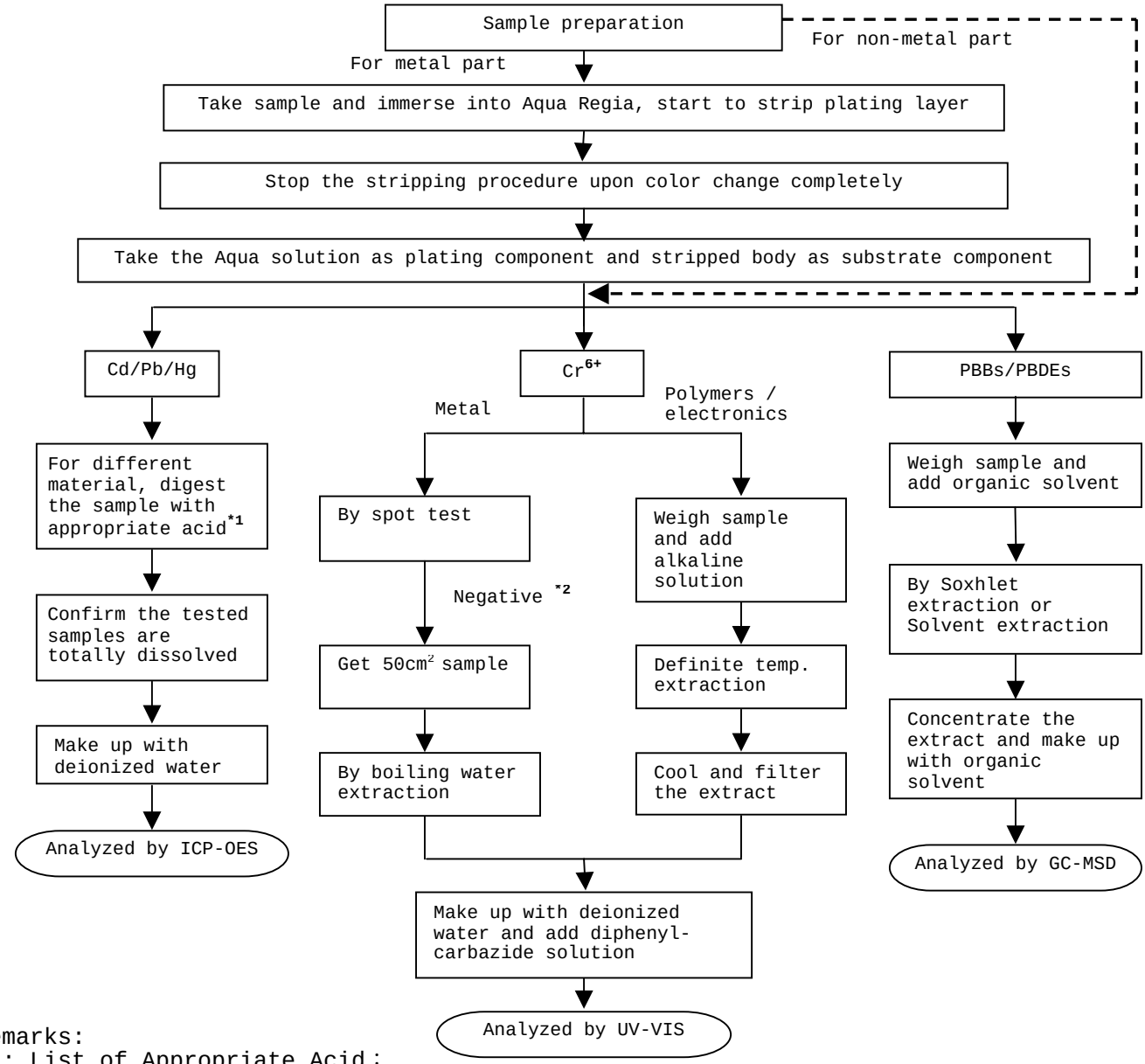
Number : TWNC00265155

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	$HNO_3, HCl, HF, H_2O_2, H_3BO_3$
Metals	HNO_3, HCl, HF
Electronics	$HNO_3, HCl, H_2O_2, HBF_4$

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

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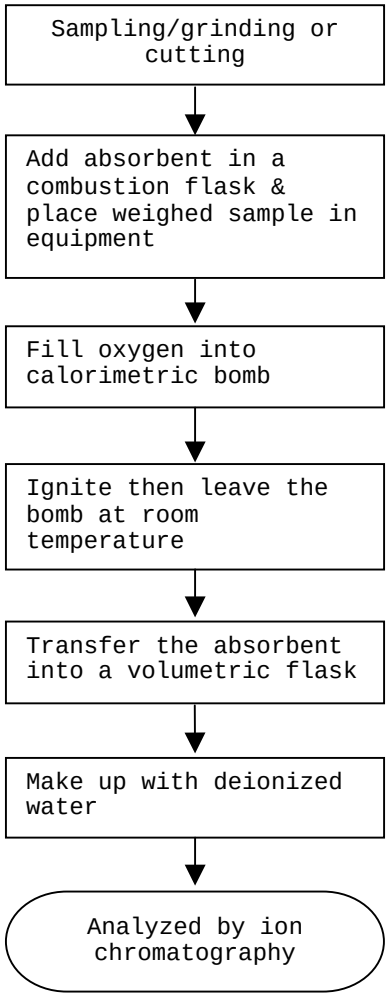
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content

Reference Standard：EN 14582



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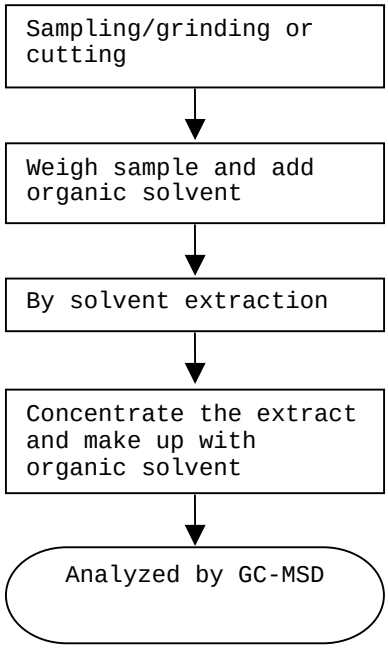
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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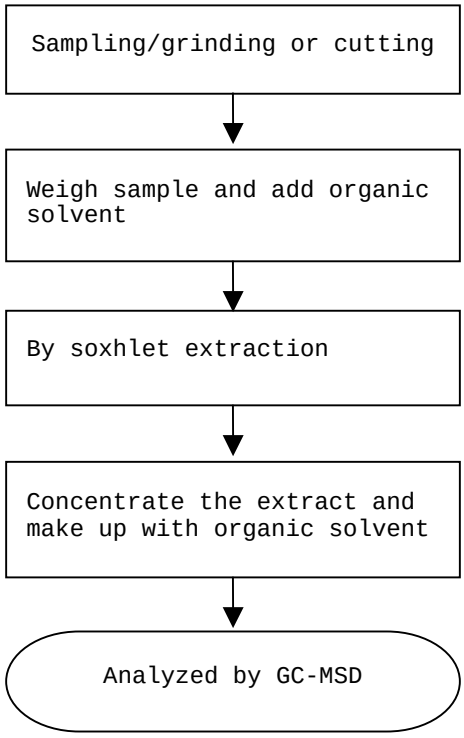
Number : TWNC00265155

Test Conducted

(Ⅳ) Measurement Flowchart:
Test For Hexabromocyclododecane (HBCDD)
Reference Standard：USEPA 3540C



End of Report

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Test Conducted

Photo

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Test Report Number : TWNC00265156

Applicant: Littelfuse Philippines Inc. Date : Jul 09, 2012
LIMA Technology Center, Lipa City,
Malvar, Batangas

Sample Description:
One (1) group of submitted samples said to be :
Part Description : HOUSING COLORANT
Part Number : 057876
Date Sample Received : Jul 02, 2012
Date Test Started : Jul 02, 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 : TWNC00265156

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Red Plastic Pellets
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

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Number : TWNC00265156

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Red Plastic Pellets
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 weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Jul 02, 2012
Test Period : Jul 02, 2012 To Jul 06, 2012

(Ⅱ) RoHS Requirement:

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

The above limits were quoted from Annex II of 2011/65/EU for homogeneous material.

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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 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
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-MS.	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

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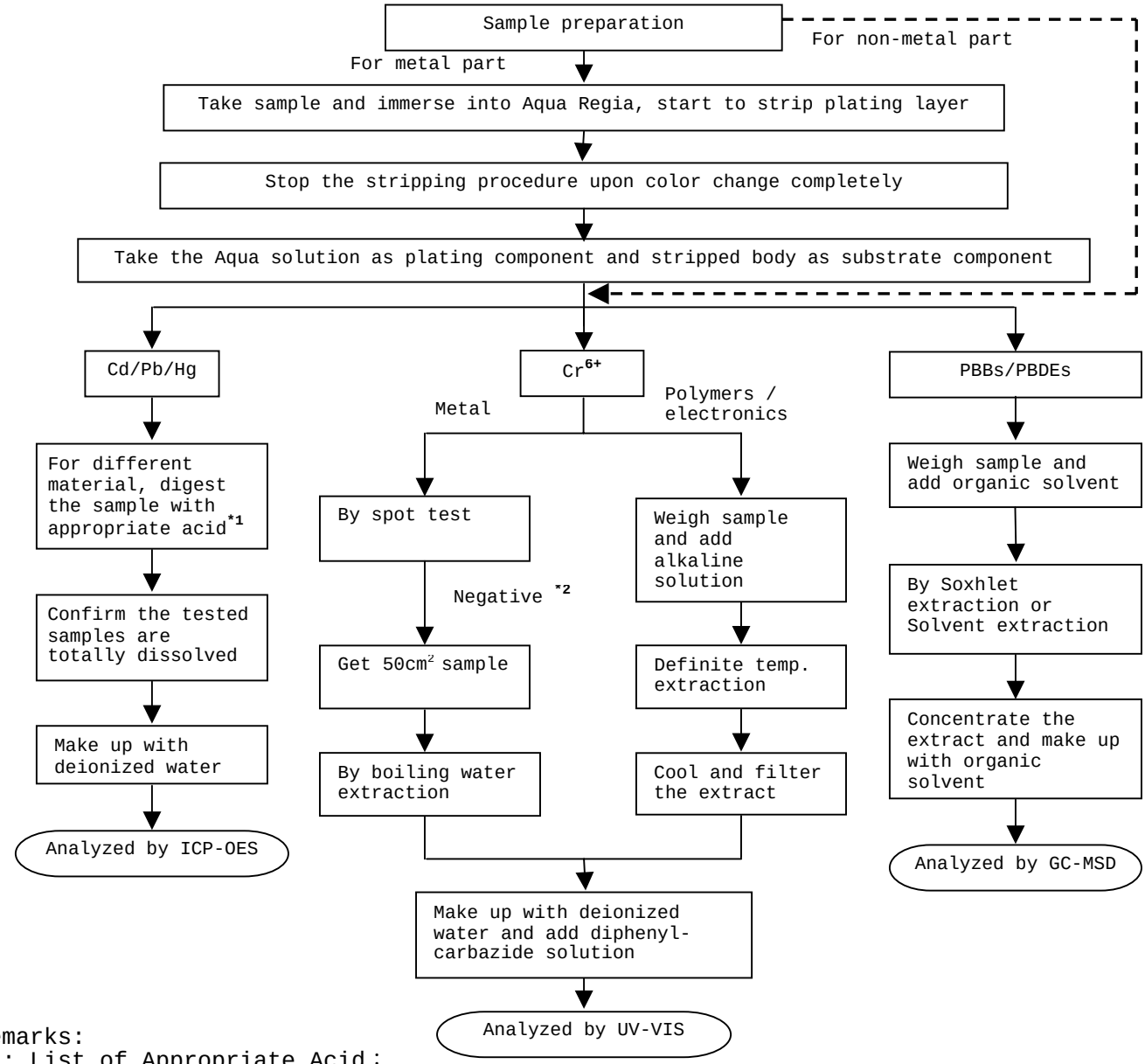
Number : TWNC00265156

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	$HNO_3, HCl, HF, H_2O_2, H_3BO_3$
Metals	HNO_3, HCl, HF
Electronics	$HNO_3, HCl, H_2O_2, HBF_4$

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

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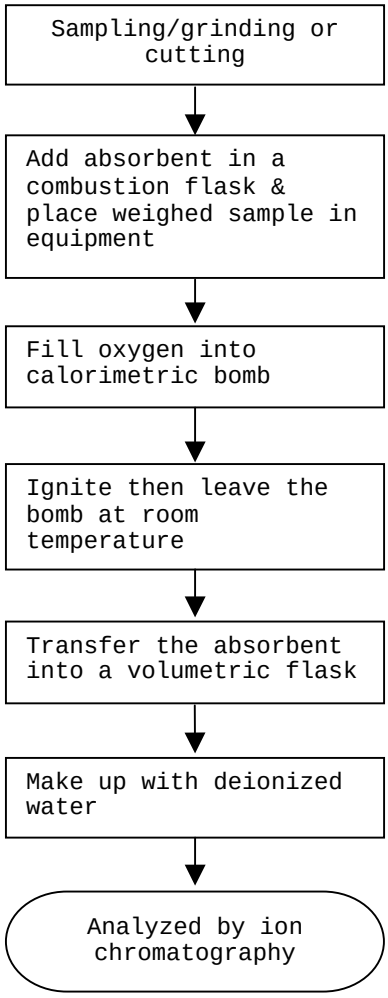
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content

Reference Standard：EN 14582



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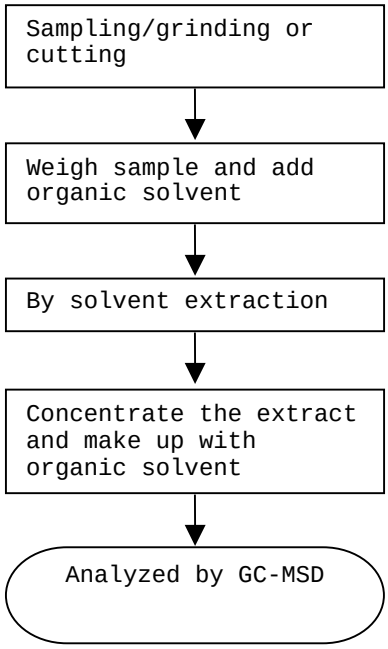
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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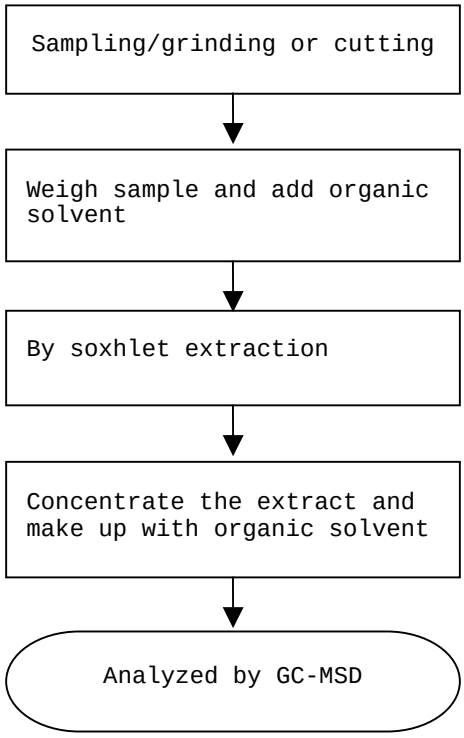
Number : TWNC00265156

Test Conducted

(Ⅳ) Measurement Flowchart:
Test For Hexabromocyclododecane (HBCDD)
Reference Standard：USEPA 3540C



End of Report

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Number : TWNC00265156

Test Conducted

Photo

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Test Report Number : TWNC00265157

Applicant: Littelfuse Philippines Inc. Date : Jul 06, 2012
LIMA Technology Center, Lipa City,
Malvar, Batangas

Sample Description:
One (1) group of submitted samples said to be :
Part Description : BROWN COLORANT
Part Number : 057878
Date Sample Received : Jul 02, 2012
Date Test Started : Jul 02, 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

Intertek Testing Services Taiwan Ltd.
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Number : TWNC00265157

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Brown Plastic Pellets
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

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Number : TWNC00265157

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Brown Plastic Pellets
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 weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Jul 02, 2012
Test Period : Jul 02, 2012 To Jul 05, 2012

(Ⅱ) RoHS Requirement:

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

The above limits were quoted from Annex II of 2011/65/EU for homogeneous material.

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Number : TWNC00265157

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 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
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-MS.	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

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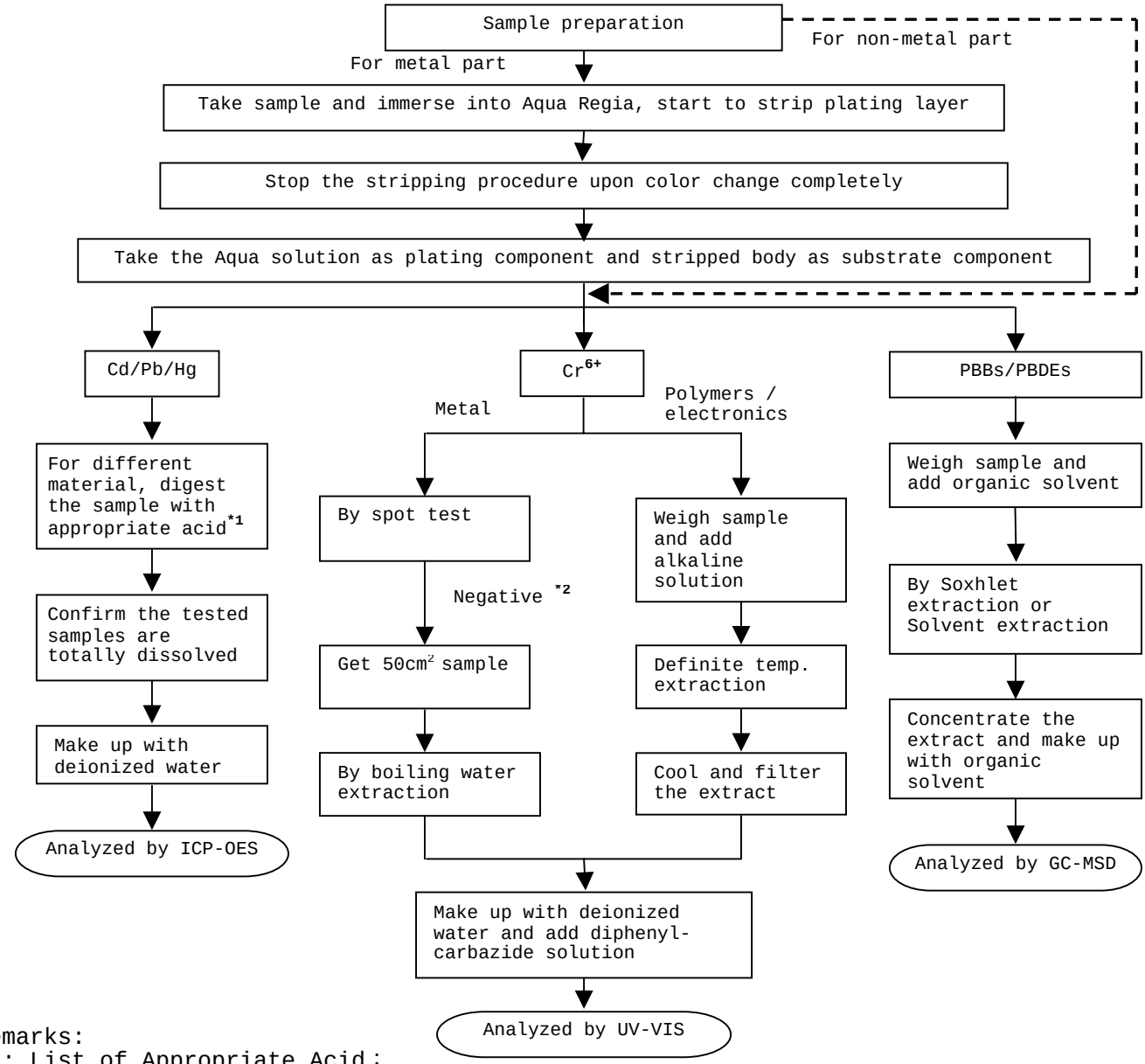
Number : TWNC00265157

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	$HNO_3, HCl, HF, H_2O_2, H_3BO_3$
Metals	HNO_3, HCl, HF
Electronics	$HNO_3, HCl, H_2O_2, HBF_4$

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

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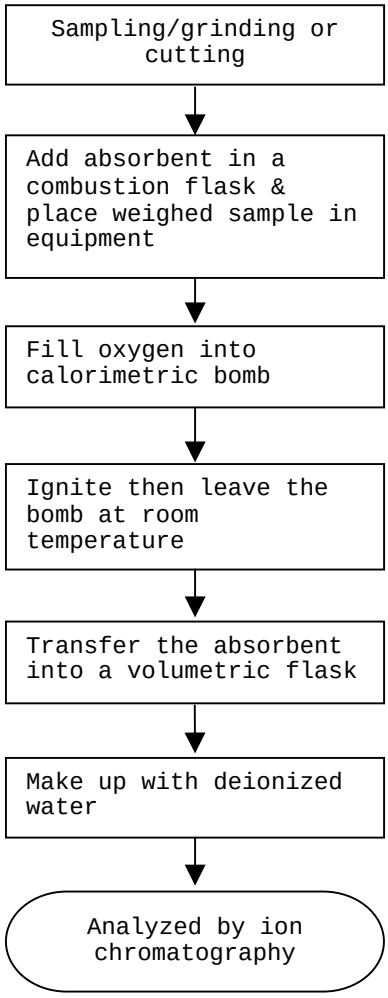
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content

Reference Standard：EN 14582



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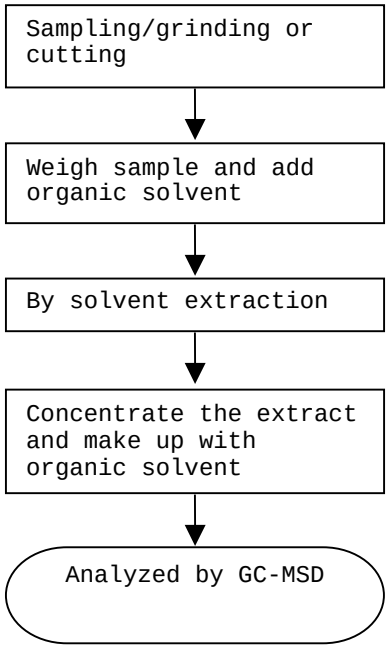
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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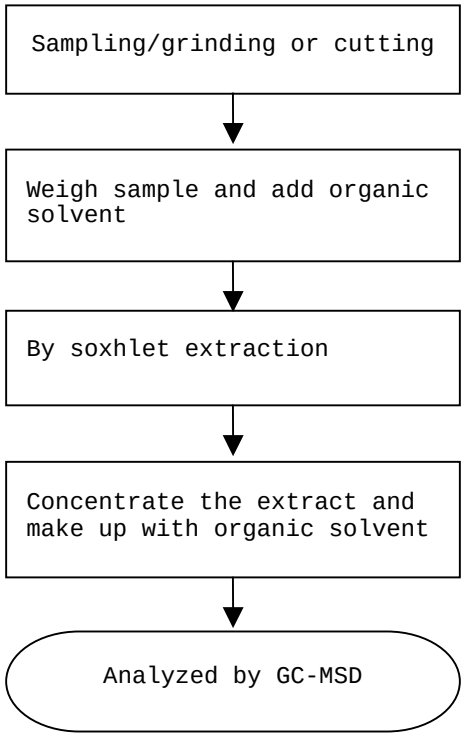
Number : TWNC00265157

Test Conducted

(Ⅳ) Measurement Flowchart:
Test For Hexabromocyclododecane (HBCDD)
Reference Standard：USEPA 3540C



End of Report

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Test Conducted

Photo

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Test Report Number : TWNC00265158

Applicant: Littelfuse Philippines Inc. Date : Jul 06, 2012
LIMA Technology Center, Lipa City,
Malvar, Batangas

Sample Description:
One (1) group of submitted samples said to be :
Part Description : RED COLORANT
Part Number : 057879
Date Sample Received : Jul 02, 2012
Date Test Started : Jul 02, 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 : TWNC00265158

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Red Plastic Pellets
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

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Number : TWNC00265158

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Red Plastic Pellets
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 weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Jul 02, 2012
Test Period : Jul 02, 2012 To Jul 05, 2012

(Ⅱ) RoHS Requirement:

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

The above limits were quoted from Annex II of 2011/65/EU for homogeneous material.

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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 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
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-MS.	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

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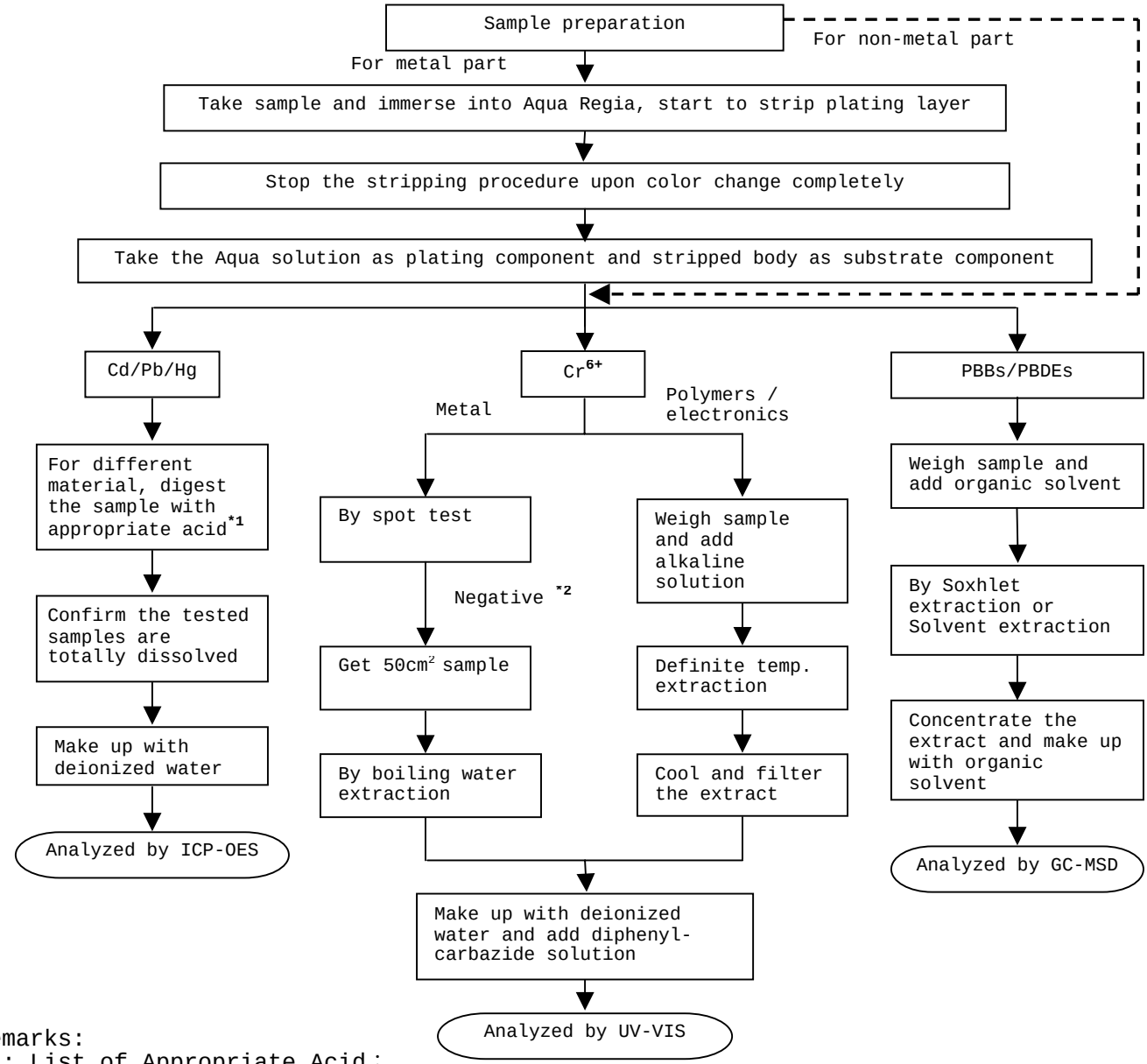
Number : TWNC00265158

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	$HNO_3, HCl, HF, H_2O_2, H_3BO_3$
Metals	HNO_3, HCl, HF
Electronics	$HNO_3, HCl, H_2O_2, HBF_4$

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

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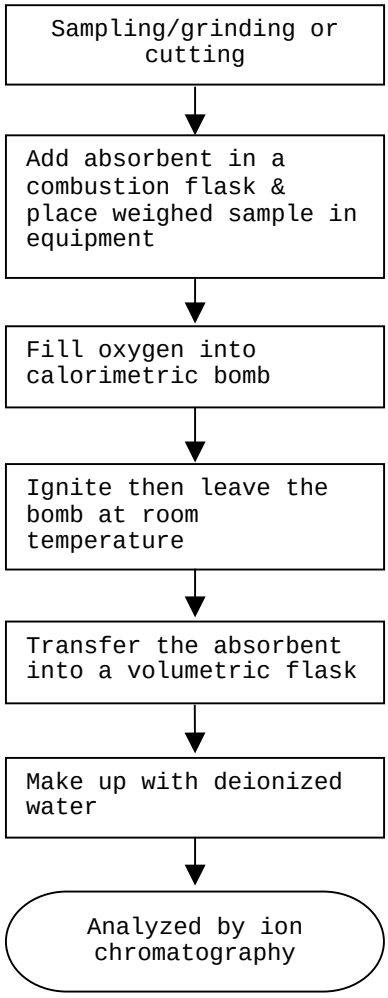
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content

Reference Standard：EN 14582



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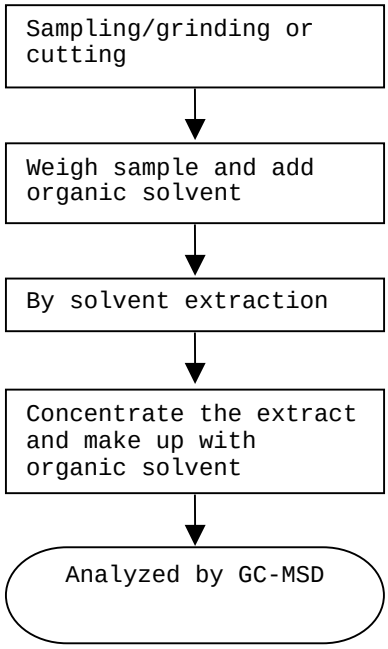
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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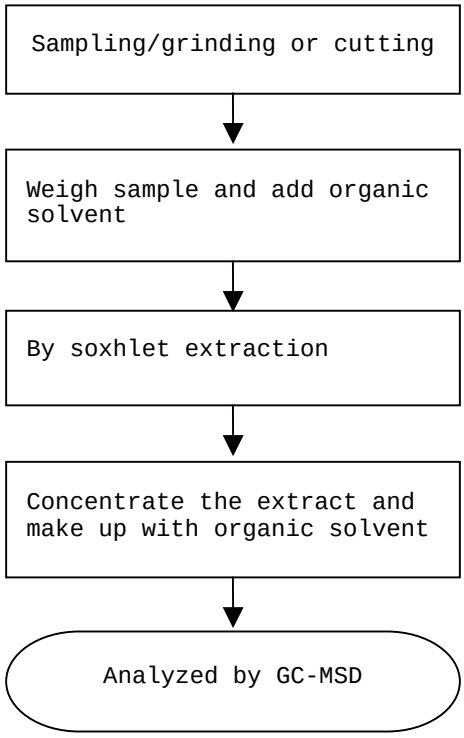
Number : TWNC00265158

Test Conducted

(Ⅳ) Measurement Flowchart:
Test For Hexabromocyclododecane (HBCDD)
Reference Standard：USEPA 3540C



End of Report

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Number : TWNC00265158

Test Conducted

Photo

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Test Report Number : TWNC00265159

Applicant: Littelfuse, Inc. Date : Jul 06, 2012
800 E. NORTHWEST HWY
DESPLAINES IL 60016

Sample Description:
One (1) group of submitted samples said to be :
Part Description : YELLOW COLORANT
Part Number : 057881
Date Sample Received : Jul 02, 2012
Date Test Started : Jul 02, 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

Intertek Testing Services Taiwan Ltd.
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Number : TWNC00265159

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Yellow Plastic Pellets
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

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Number : TWNC00265159

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Yellow Plastic Pellets
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 weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Jul 02, 2012
Test Period : Jul 02, 2012 To Jul 05, 2012

(Ⅱ) RoHS Requirement:

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

The above limits were quoted from Annex II of 2011/65/EU for homogeneous material.

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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 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
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-MS.	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

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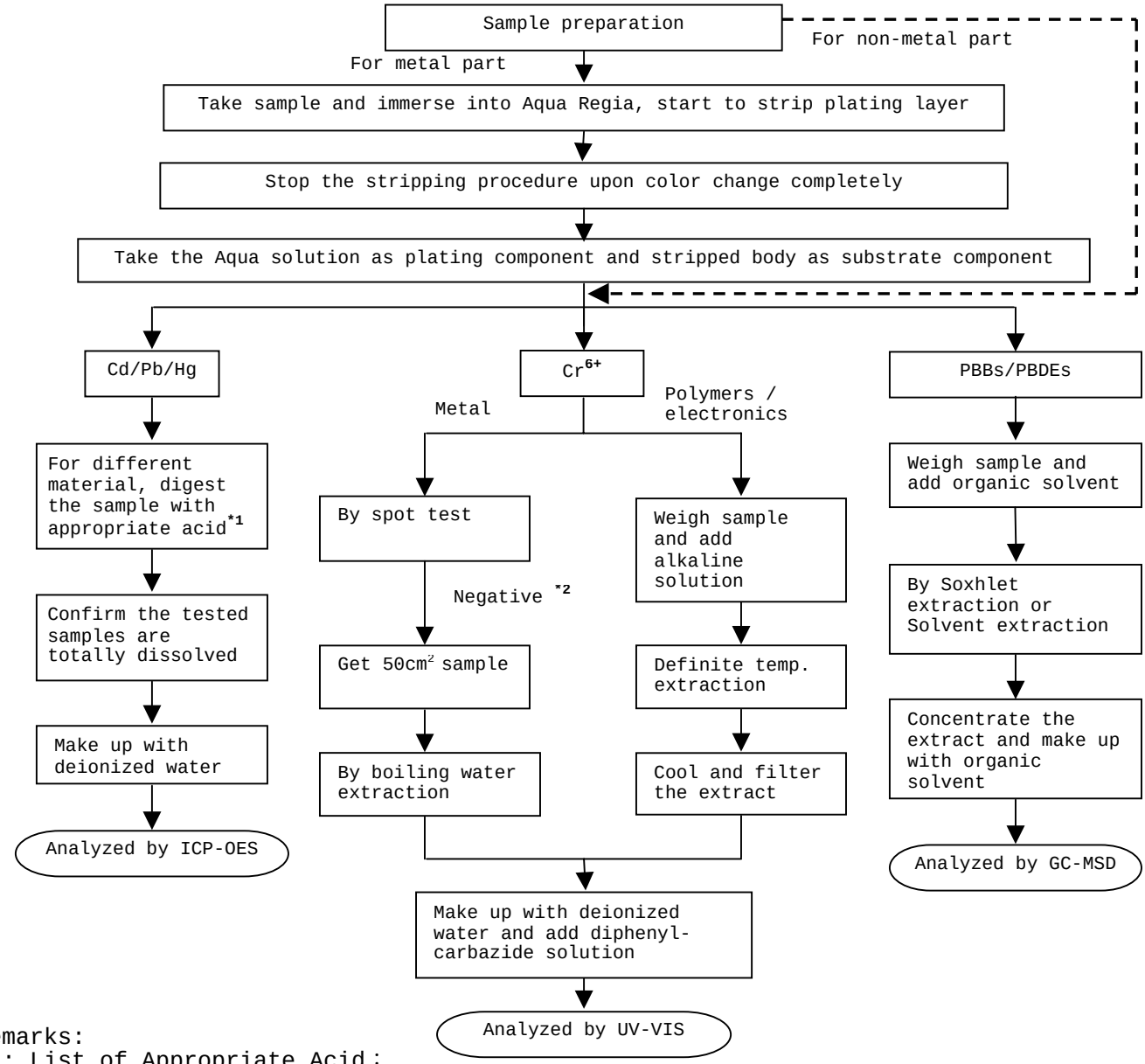
Number : TWNC00265159

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	$HNO_3, HCl, HF, H_2O_2, H_3BO_3$
Metals	HNO_3, HCl, HF
Electronics	$HNO_3, HCl, H_2O_2, HBF_4$

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

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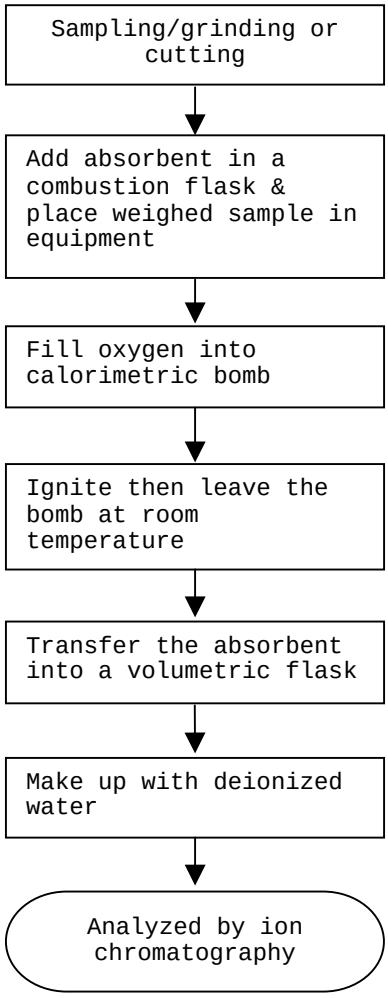
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content

Reference Standard：EN 14582



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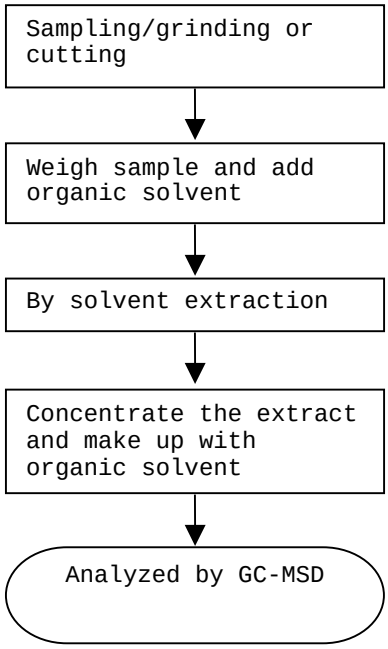
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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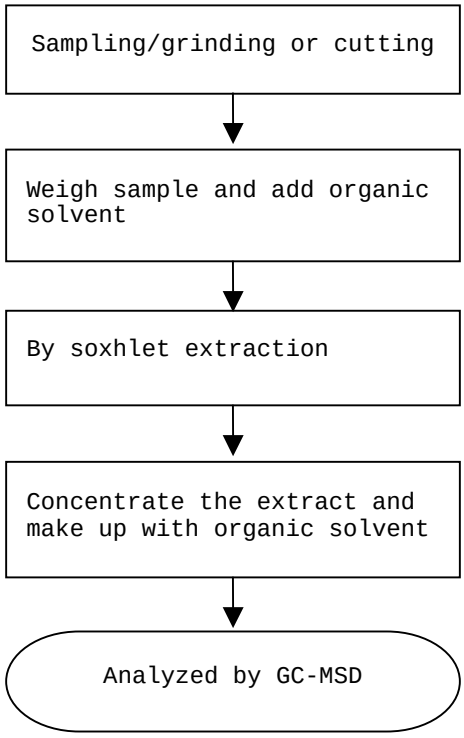
Number : TWNC00265159

Test Conducted

(Ⅳ) Measurement Flowchart:
Test For Hexabromocyclododecane (HBCDD)
Reference Standard：USEPA 3540C



End of Report

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Number : TWNC00265159

Test Conducted

Photo

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Test Report Number : TWNC00299230

Applicant: Littelfuse, S.A. de C.V. Date : Feb 25, 2013
Blvd. Fausto Z. Martinez #1800
Col. Magisterio Seccion 38 C.P.
26070 Piedra Negras, Coahuila, Mexico

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

Part Description	:	Color concentrate gray
Part Number	:	057874
Date Sample Received	:	Feb 19, 2013
Date Test Started	:	Feb 19, 2013

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

Authorized by:
On Behalf of Intertek Testing Services
Taiwan Limited

INTERTEK TESTING SERVICES TAIWAN LTD.

K. Y. Liang
Director

Intertek Testing Services Taiwan Ltd.
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Number : TWNC00299230

Test Conducted

(Ⅰ) Test Result Summary:

Test Item	Unit	Test Method	Result	RL
			Dark gray plastic pellets	
Heavy Metal				
Cadmium (Cd) Content	ppm	With reference to IEC 62321: 2008, by microwave digestion and determined by ICP-OES.	ND	2
Lead (Pb) Content	ppm	With reference to IEC 62321: 2008, by microwave digestion and determined by ICP-OES.	ND	2
Mercury (Hg) Content	ppm	With reference to IEC 62321: 2008, by microwave digestion and determined by ICP-OES.	ND	2
Chromium VI (Cr^{6+}) Content	ppm	With reference to IEC 62321: 2008, by alkaline digestion and determined by UV-Vis Spectrophotometer.	ND	1
Polybrominated Biphenyls (PBBs)				
Monobrominated Biphenyls (MonoBB)	ppm	With reference to IEC 62321: 2008, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary.	ND	5
Dibrominated Biphenyls (DiBB)	ppm		ND	5
Tribrominated Biphenyls (TriBB)	ppm		ND	5
Tetrabrominated Biphenyls (TetraBB)	ppm		ND	5
Pentabrominated Biphenyls (PentaBB)	ppm		ND	5
Hexabrominated Biphenyls (HexaBB)	ppm		ND	5
Heptabrominated Biphenyls (HeptaBB)	ppm		ND	5
Octabrominated Biphenyls (OctaBB)	ppm		ND	5
Nonabrominated Biphenyls (NonaBB)	ppm		ND	5
Decabrominated Biphenyl (DecaBB)	ppm		ND	5

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Number : TWNC00299230

Test Conducted

Test Item	Unit	Test Method	Result Dark gray plastic pellets	RL
Polybrominated Diphenyl Ethers (PBDEs)				
Monobrominated Diphenyl Ethers (MonoBDE)	ppm	With reference to IEC 62321: 2008, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary.	ND	5
Dibrominated Diphenyl Ethers (DiBDE)	ppm		ND	5
Tribrominated Diphenyl Ethers (TriBDE)	ppm		ND	5
Tetrabrominated Diphenyl Ethers (TetraBDE)	ppm		ND	5
Pentabrominated Diphenyl Ethers (PentaBDE)	ppm		ND	5
Hexabrominated Diphenyl Ethers (HexaBDE)	ppm		ND	5
Heptabrominated Diphenyl Ethers (HeptaBDE)	ppm		ND	5
Octabrominated Diphenyl Ethers (OctaBDE)	ppm		ND	5
Nonabrominated Diphenyl Ethers (NonaBDE)	ppm		ND	5
Decabrominated Diphenyl Ether (DecaBDE)	ppm		ND	5
Phthalates				
Di(2-ethylhexyl) Phthalate (DEHP)	ppm	With reference to EN 14372: 2004, by solvent extraction and determined by GC-MS.	ND	50
Dibutyl Phthalate (DBP)	ppm		ND	50
Benzyl Butyl Phthalate (BBP)	ppm		ND	50
Halogen Content				
Fluorine (F)	ppm	With reference to EN 14582:2007 by calorimetric bomb with oxygen and determined by Ion Chromatograph.	ND	50
Chlorine (Cl)	ppm		ND	50
Bromine (Br)	ppm		ND	50
Iodine (I)	ppm		ND	50
Others				
Hexabromo cyclododecane (HBCDD)	ppm	With reference to USEPA 3540C, by solvent extraction and determined by GC-MS.	ND	10

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Number : TWNC00299230

Test Conducted

Remarks: ppm = parts per million based on weight of tested sample = mg/kg
ND = Not detected
RL = Reporting Limit, Quantitation limit of analyte in sample

Responsibility of Chemist: Kevin Liu/ Irene Chiou/ Vico Lin

Date Sample Received : Feb 19, 2013
Test Period : Feb 19, 2013 to Feb 21, 2013

(Ⅱ) Limit:
RoHS Limit

Restricted Substances	**Limits**
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 Annex II of 2011/65/EU for homogeneous material.

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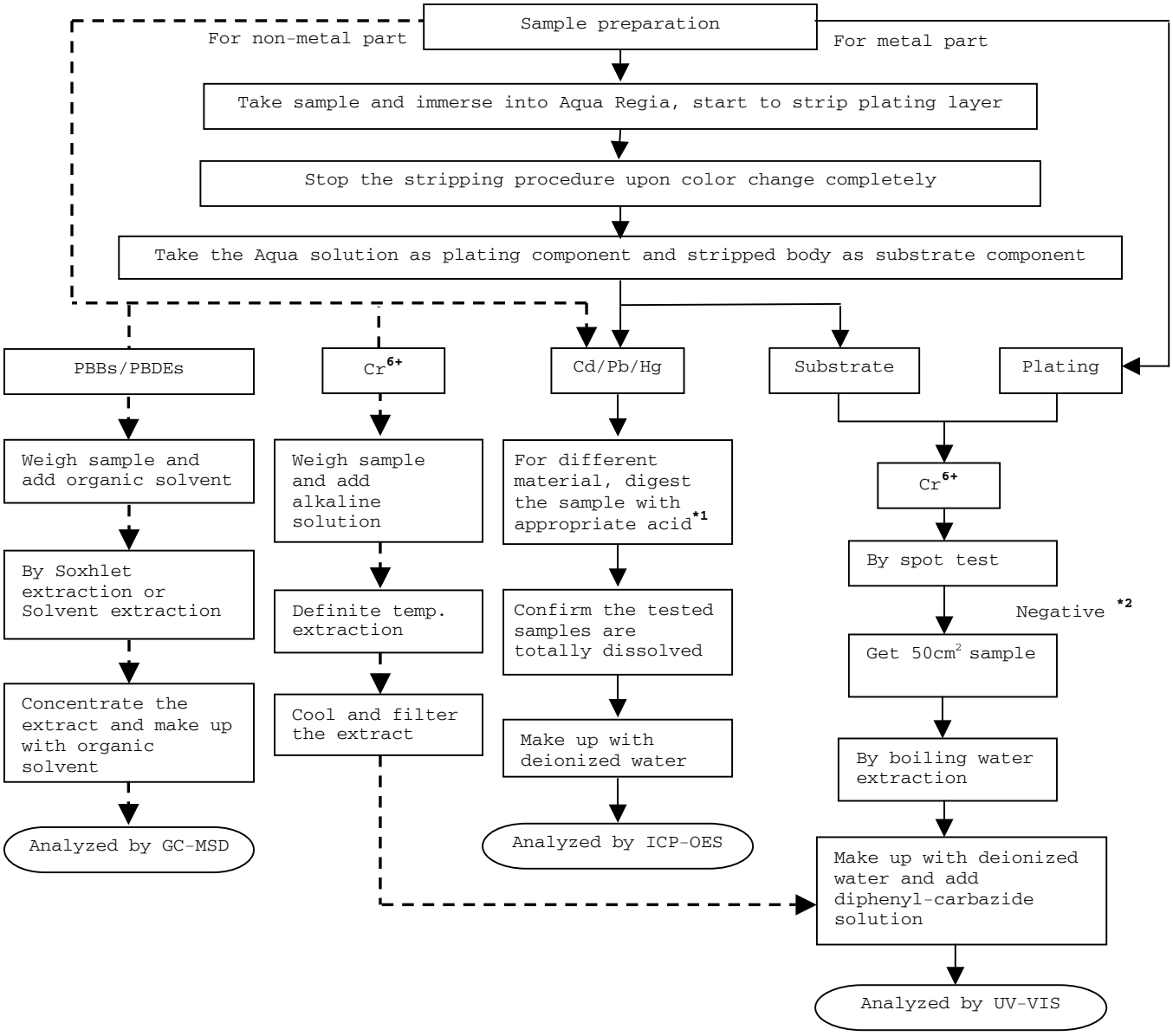
Test Conducted

(Ⅳ) Measurement Flowchart:

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

Reference Standard: IEC 62321 edition 1.0:2008



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Number : TWNC00299230

Test Conducted

Remarks:
*1: List of Appropriate Acid：

Material	Acid Added for Digestion
Polymers	HNO_3,HCl,HF,H_2O_2,H_3BO_3
Metals	HNO_3,HCl,HF
Electronics	HNO_3,HCl,H_2O_2,HBF_4

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

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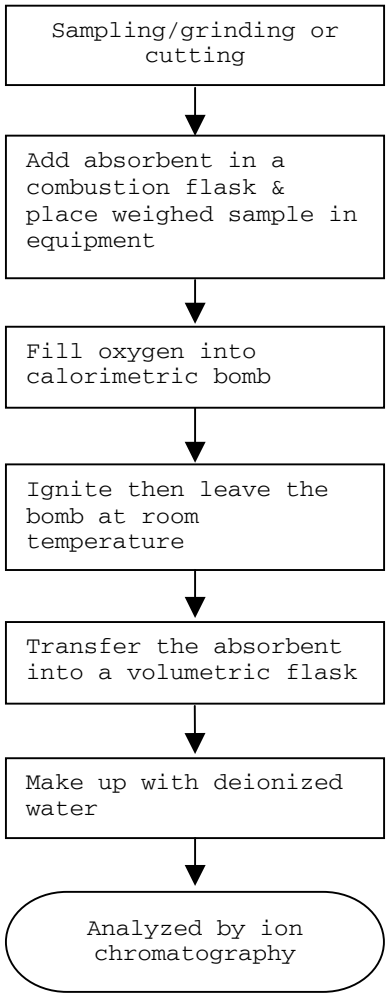
Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2410

Number : TWNC00299230

Test Conducted

Test for Halogen Content
Reference Standard：EN 14582



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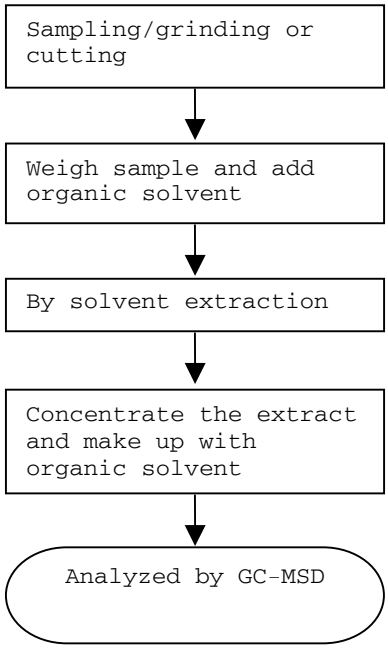
Number : TWNC00299230

Test Conducted

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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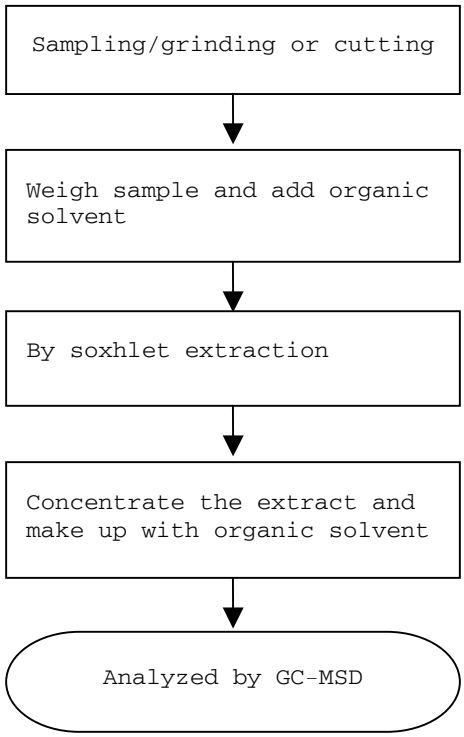
Number : TWNC00299230

Test Conducted

Test For Hexabromocyclododecane (HBCDD)
Reference Standard：USEPA 3540C



End of Report

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Number : TWNC00299230

Test Conducted

Photo

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Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2410

Test Report Number : TWNC00299229

Applicant: Littelfuse, S.A. de C.V. Date : Feb 25, 2013
Blvd. Fausto Z. Martinez #1800
Col. Magisterio Seccion 38 C.P.
26070 Piedra Negras, Coahuila, Mexico

Sample Description:
One (1) group of submitted samples said to be :
Part Description : VYDYNE 21SP-C Nylon
Part Number : 057357
Date Sample Received : Feb 19, 2013
Date Test Started : Feb 19, 2013

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

Intertek Testing Services Taiwan Ltd.
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Number : TWNC00299229

Test Conducted

(Ⅰ) Test Result Summary:

Test Item	Unit	Test Method	Result	RL
			Semitransparent plastic pellets	
Heavy Metal				
Cadmium (Cd) Content	ppm	With reference to IEC 62321: 2008, by microwave digestion and determined by ICP-OES.	ND	2
Lead (Pb) Content	ppm	With reference to IEC 62321: 2008, by microwave digestion and determined by ICP-OES.	ND	2
Mercury (Hg) Content	ppm	With reference to IEC 62321: 2008, by microwave digestion and determined by ICP-OES.	ND	2
Chromium VI (Cr^{6+}) Content	ppm	With reference to IEC 62321: 2008, by alkaline digestion and determined by UV-Vis Spectrophotometer.	ND	1

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Number : TWNC00299229

Test Conducted

Test Item	Unit	Test Method	Result	RL
			Semitransparent plastic pellets	
Polybrominated Biphenyls (PBBs)				
Monobrominated Biphenyls (MonoBB)	ppm	With reference to IEC 62321: 2008, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary.	ND	5
Dibrominated Biphenyls (DiBB)	ppm		ND	5
Tribrominated Biphenyls (TriBB)	ppm		ND	5
Tetrabrominated Biphenyls (TetraBB)	ppm		ND	5
Pentabrominated Biphenyls (PentaBB)	ppm		ND	5
Hexabrominated Biphenyls (HexaBB)	ppm		ND	5
Heptabrominated Biphenyls (HeptaBB)	ppm		ND	5
Octabrominated Biphenyls (OctaBB)	ppm		ND	5
Nonabrominated Biphenyls (NonaBB)	ppm		ND	5
Decabrominated Biphenyl (DecaBB)	ppm		ND	5
Polybrominated Diphenyl Ethers (PBDEs)				
Monobrominated Diphenyl Ethers (MonoBDE)	ppm	With reference to IEC 62321: 2008, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary.	ND	5
Dibrominated Diphenyl Ethers (DiBDE)	ppm		ND	5
Tribrominated Diphenyl Ethers (TriBDE)	ppm		ND	5
Tetrabrominated Diphenyl Ethers (TetraBDE)	ppm		ND	5
Pentabrominated Diphenyl Ethers (PentaBDE)	ppm		ND	5
Hexabrominated Diphenyl Ethers (HexaBDE)	ppm		ND	5
Heptabrominated Diphenyl Ethers (HeptaBDE)	ppm		ND	5
Octabrominated Diphenyl Ethers (OctaBDE)	ppm		ND	5
Nonabrominated Diphenyl Ethers (NonaBDE)	ppm		ND	5
Decabrominated Diphenyl Ether (DecaBDE)	ppm		ND	5

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Number : TWNC00299229

Test Conducted

Test Item	Unit	Test Method	Result	RL
			Semitransparent plastic pellets	
Phthalates				
Di(2-ethylhexyl) Phthalate (DEHP)	ppm	With reference to EN 14372: 2004, by solvent extraction and determined by GC-MS.	ND	50
Dibutyl Phthalate (DBP)	ppm		ND	50
Benzyl Butyl Phthalate (BBP)	ppm		ND	50
Halogen Content				
Fluorine (F)	ppm	With reference to EN 14582:2007 by calorimetric bomb with oxygen and determined by Ion Chromatograph.	ND	50
Chlorine (Cl)	ppm		ND	50
Bromine (Br)	ppm		ND	50
Iodine (I)	ppm		ND	50
Others				
Hexabromo cyclododecane (HBCDD)	ppm	With reference to USEPA 3540C, by solvent extraction and determined by GC-MS.	ND	10

Remarks: ppm = parts per million based on weight of tested sample = mg/kg
ND = Not detected
RL = Reporting Limit, Quantitation limit of analyte in sample

Responsibility of Chemist: Kevin Liu/ Irene Chiou/ Vico Lin

Date Sample Received : Feb 19, 2013
Test Period : Feb 19, 2013 to Feb 21, 2013

(Ⅱ) Limit:
RoHS Limit

Restricted Substances	**Limits**
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 Annex II of 2011/65/EU for homogeneous material.

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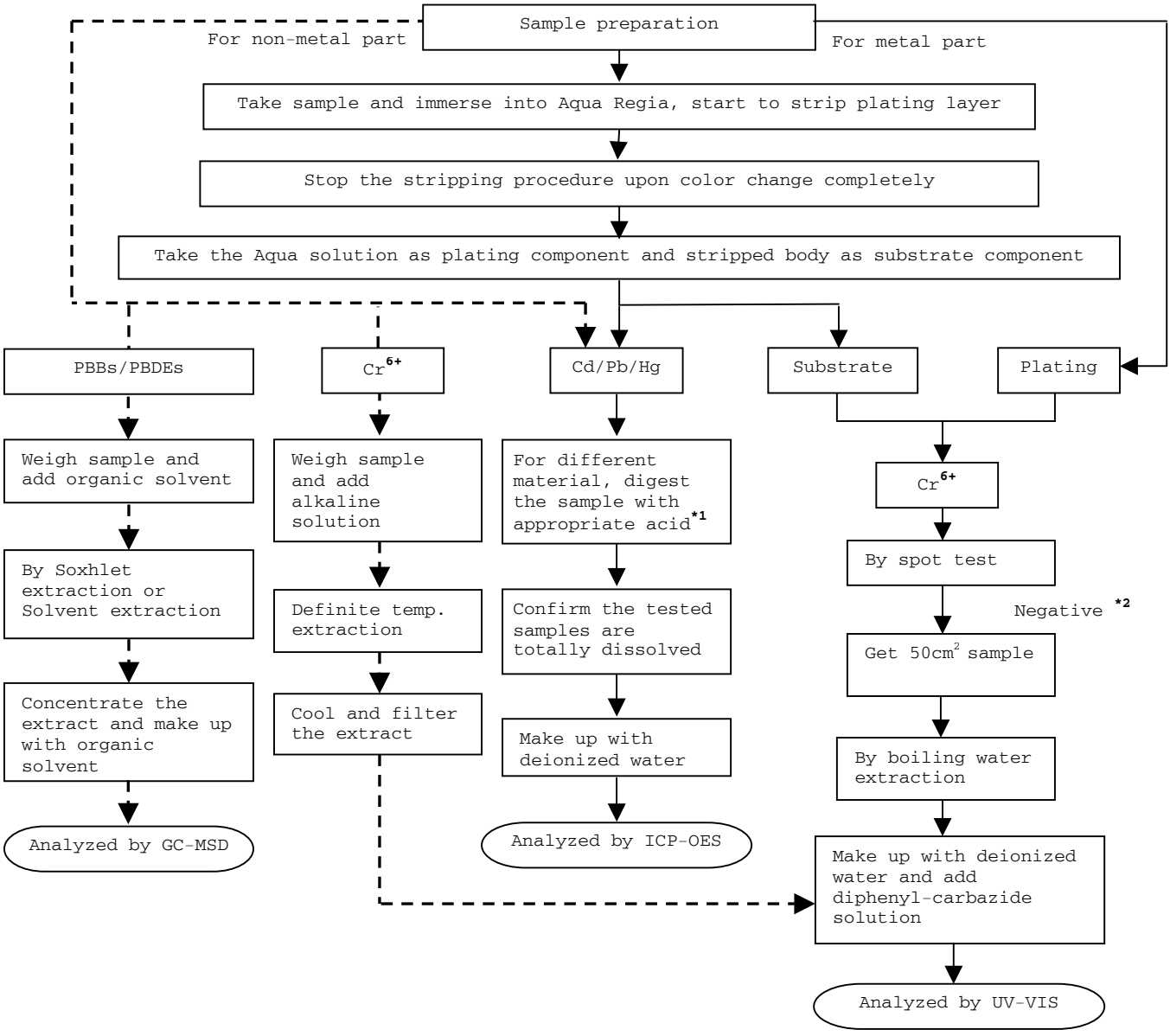
Test Conducted

(Ⅳ) Measurement Flowchart:

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

Reference Standard: IEC 62321 edition 1.0:2008



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Number : TWNC00299229

Test Conducted

Remarks:

*1: List of Appropriate Acid：

Material	Acid Added for Digestion
Polymers	HNO_3, HCl, HF, H_2O_2, H_3BO_3
Metals	HNO_3, HCl, HF
Electronics	HNO_3, HCl, H_2O_2, HBF_4

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

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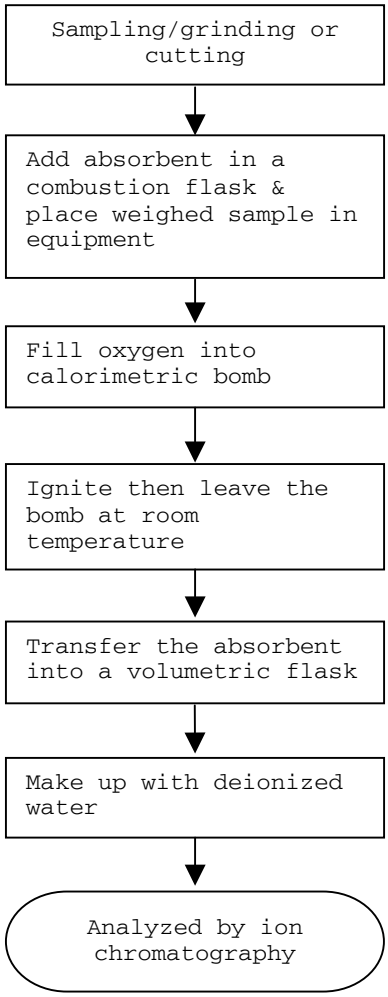
Number : TWNC00299229

Test Conducted

Test for Halogen Content
Reference Standard：EN 14582



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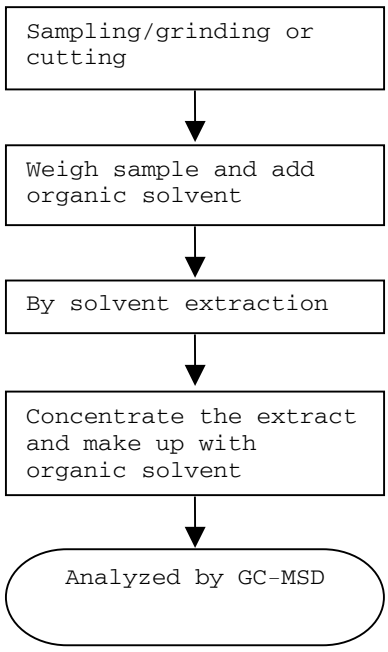
Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2410

Number : TWNC00299229

Test Conducted

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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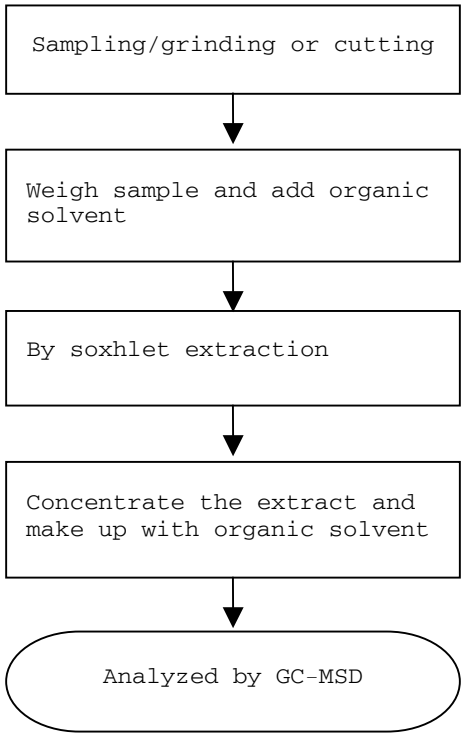
Number : TWNC00299229

Test Conducted

Test For Hexabromocyclododecane (HBCDD)
Reference Standard：USEPA 3540C



End of Report

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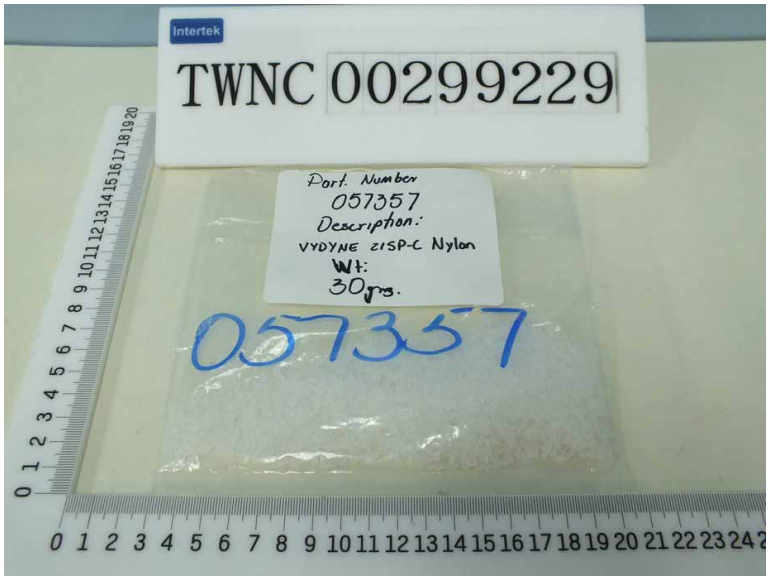
Number : TWNC00299229

Test Conducted

Photo



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Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2410

Test Report Number : TWNC00265160

Applicant: Littelfuse Philippines Inc. Date : Jul 06, 2012
LIMA Technology Center, Lipa City,
Malvar, Batangas

Sample Description:
One (1) group of submitted samples said to be :
Part Description : GREEN COLORANT
Part Number : 057883
Date Sample Received : Jul 02, 2012
Date Test Started : Jul 02, 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

Intertek Testing Services Taiwan Ltd.
8F., No. 423, Ruiguang Rd., Neihu District, Taipei 114, Taiwan, R.O.C.
全國公證檢驗股份有限公司
114 台北市內湖區瑞光路 423 號 8 樓
Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2410

Number : TWNC00265160

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Green Plastic Pellets
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

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(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Green Plastic Pellets
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 weight of tested sample = mg/kg
ND = Not detected

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

Date Sample Received : Jul 02, 2012
Test Period : Jul 02, 2012 To Jul 05, 2012

(Ⅱ) RoHS Requirement:

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

The above limits were quoted from Annex II of 2011/65/EU for homogeneous material.

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(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 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
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-MS.	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

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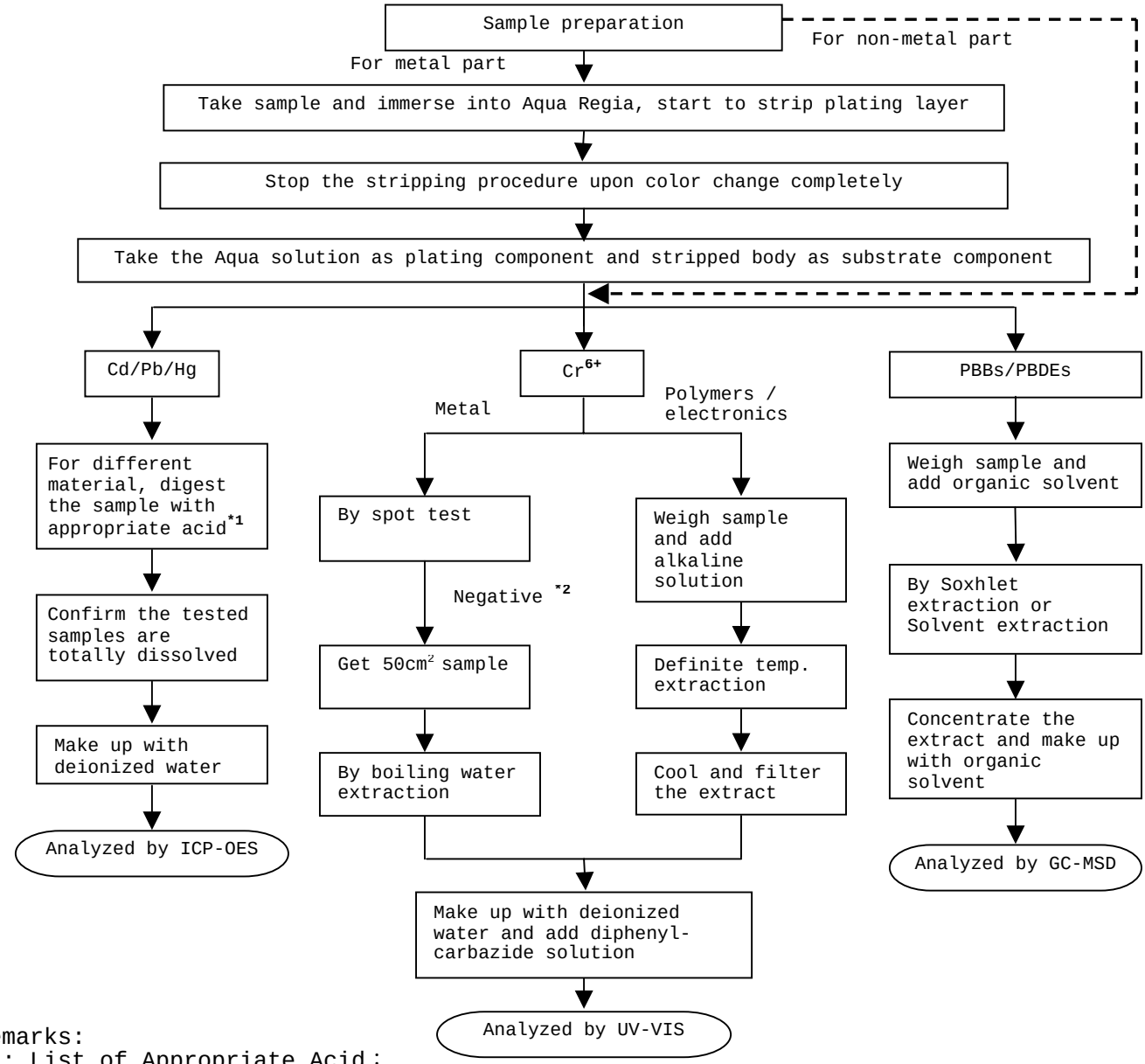
Test Conducted

(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	$HNO_3, HCl, HF, H_2O_2, H_3BO_3$
Metals	HNO_3, HCl, HF
Electronics	$HNO_3, HCl, H_2O_2, HBF_4$

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

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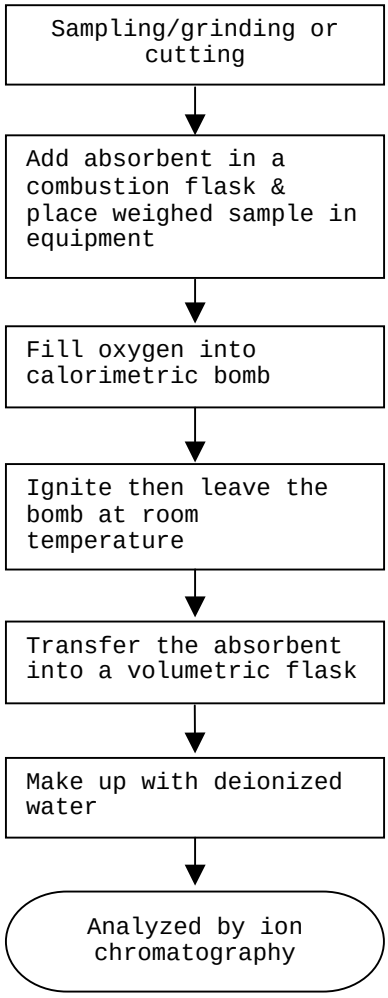
(Ⅳ) Measurement Flowchart:

Test for Halogen Content

Reference Standard：EN 14582



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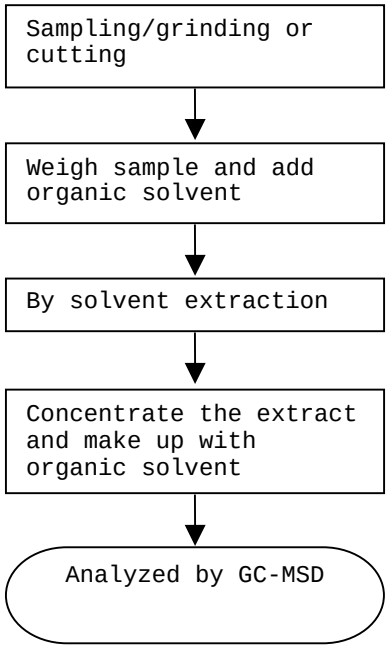
(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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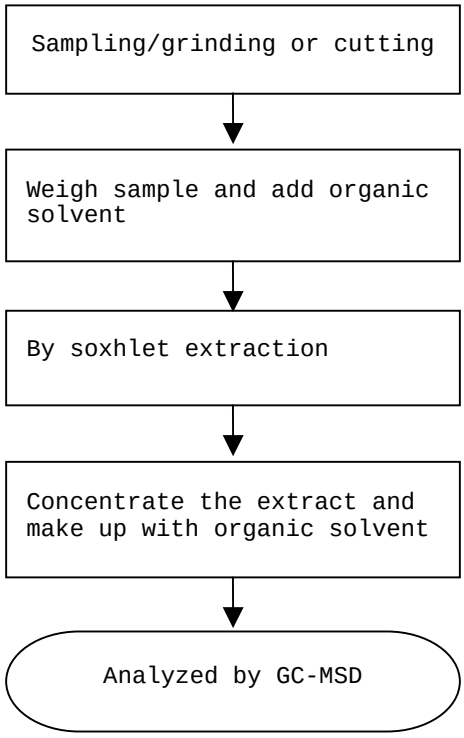
(Ⅳ) Measurement Flowchart:
Test For Hexabromocyclododecane (HBCDD)
Reference Standard：USEPA 3540C



End of Report

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Photo

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