ICP Test Report Certification Packet

Company name: Littelfuse, Inc.

Product Series: 3AG Traditional Panel Mount Holder

Product #: 342xxx Series

Issue Date: September 10, 2012

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

Issued by: KRISTEEN BACILA

<Global EHS Engineer>

(1) Parts, sub-materials and unit parts

This document covers the 3AG Traditional Panel Mount Holder 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	904-228-002	Rivet	3-5
2	912-249	Spring	6-8
3	342004-6	Insert	9-11
4	883-030	Clip	12-14
5	057259	Knob	15-23
6	057277	Body	24-33
7	342012-4	Side Terminal	34-38

Report No.: MX11-1041-04
Date：2011-06-16

TEST REPORT

APPLICANT

Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martínez 1800, Col. Magisterio Sección 38, Piedras Negras, Coahuila
Ing. María Valdez

SAMPLE DESCRIPTION

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

Sample Description	NP
Item No.	4) N/P 904228002 Rivet “Material Plateado”
Country of Origin	NP
Buyer's Name	NP
Supplier's Name	NP
Date sample received	2011-05-19
Testing period	2011-05-23 to 2011-06-09

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TEST CONDUCTED

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

Sample Number	Testing item	Conclusion	Failed component	Failed result
4 (Base)	N/P 904228002 “Rivet Material Plateado”	Pass See Result summary	---	---
4 (Plated)	N/P 904228002 “Rivet Material Plateado”	Pass See Result summary	---	---

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TEST CONDUCTED

Samples:

Intertek Testing Services de México, S.A. de C.V.
Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150
www.intertek.com

4) Base N/P 904228002 River “Material Plateado”
4) Plated N/P 904228002 River “Material Plateado”

TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

TESTING ITEM	Ω RESULT (ppm)		Limit
	(4) Base	(4) Plated	
Cadmium (Cd) content	ND	ND	0,01% (100 ppm)
Lead (Pb) content	8,981	ND	0,1% (1000 ppm)
Mercury (Hg) content	ND	ND	0,1% (1000 ppm)
Chromium (VI) (Cr^{6+})	ND	ND	0,1% (1000 ppm)

ppm = parts per million based on dry weight of sample.
$\mu g/cm^2$ = microgram per square centimeter.
mg/kg WITH $50cm^2$ = milligram per kilogram with 50 square centimeter.
< = less than.
ND = Not detected.
The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

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

Prepared and checked by：
For Intertek

Laboratory Manager

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

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

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

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX11-1041-04 WERE TESTED SEPARATED.

Test method：

Intertek Testing Services de México, S.A. de C.V.
Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150
www.intertek.com

Report No.: MX11-1041-04
Date：2011-06-16

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
4	Chromium VI (Cr^{6+}) content	With reference to USEPA 3060, by EPA 7196	QHU2010-61p76,78	2011-05-26	MELA	20,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
4 (Base)	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	5,0
4 (Plated)	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	83,335

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
4 (Base)	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	2,0
4 (Plated)	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	33,339

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
4 (Base)	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-40p141	2011-05-24	RNC	0,25
4 (Plated)	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-40p141	2011-05-26	RNC	2,5

Intertek Testing Services de México, S.A. de C.V.
Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150
www.intertek.com

Report No.: MX11-1041-07
Date：2011-06-16

TEST REPORT

APPLICANT

Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martínez 1800, Col. Magisterio Sección 38, Piedras Negras, Coahuila
Ing. María Valdez

SAMPLE DESCRIPTION

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

Sample Description	NP
Item No.	7) N/P 912249 Spring “Material Plateado”
Country of Origin	NP
Buyer's Name	NP
Supplier's Name	NP
Date sample received	2011-05-19
Testing period	2011-05-23 to 2011-06-09

****

TEST CONDUCTED

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

CONCLUSION

Sample Number	Testing item	Conclusion	Failed component	Failed result
7 (Base)	N/P 912249 Spring “Material Plateado”	Pass See Result summary	---	---
7 (Plated)	N/P 912.249 Spring “Material Plateado”	Pass See Result summary	---	---

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TEST CONDUCTED

Samples:

Intertek Testing Services de México, S.A. de C.V.
Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150
www.intertek.com

7) Base N/P 912249 Spring “Material Plateado”
7) Plated N/P 912249 Spring “Material Plateado”

TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

TESTING ITEM	Ω RESULT (ppm)		Limit
	(7) Base	(7) Plated	
Cadmium (Cd) content	49,04	ND	0,01% (100 ppm)
Lead (Pb) content	34,95	ND	0,1% (1000 ppm)
Mercury (Hg) content	ND	ND	0,1% (1000 ppm)
Chromium (VI) (Cr^{6+})	ND	ND	0,1% (1000 ppm)

ppm = parts per million based on dry weight of sample.
$\mu g/cm^2$ = microgram per square centimeter.
mg/kg WITH $50cm^2$ = milligram per kilogram with 50 square centimeter.
< = less than.
ND = Not detected.
The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

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

Prepared and checked by：
For Intertek

Laboratory Manager

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

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

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

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX11-1041-07 WERE TESTED SEPARATED.

Test method：

Intertek Testing Services de México, S.A. de C.V.
Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150
www.intertek.com

Report No.: MX11-1041-07
Date：2011-06-16

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
7	Chromium VI (Cr^{6+}) content	With reference to USEPA 3060, by EPA 7196	QHU2010-61p76,78	2011-05-26	MELA	20,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
7 (Base)	Lead (Pb) content*	With reference to USEPA 3050MOD, by EPA 7420	MET2010-40p146	2011-05-26	MARY	20,0
7 (Plated)	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	125,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
7 (Base)	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	2,0
7 (Plated)	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	50,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
7 (Base)	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-40p141	2011-05-24	RNC	0,25
7 (Plated)	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-40p141	2011-05-26	RNC	2,5

*The sample MX11-1041-7 (BASE) for Lead was analyzed for EPA 7000, the method EPA 6010 presented espectral interference.

Intertek Testing Services de México, S.A. de C.V.
Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150
www.intertek.com

Report No.: MX11-1041-09
Date：2011-06-15

TEST REPORT

APPLICANT

Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martínez 1800, Col. Magisterio Sección 38, Piedras Negras, Coahuila
Ing. María Valdez

SAMPLE DESCRIPTION

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

Sample Description	NP
Item No.	9) N/P 3420046 Knob Insert “Material Plateado”
Country of Origin	NP
Buyer's Name	NP
Supplier's Name	NP
Date sample received	2011-05-19
Testing period	2011-05-23 to 2011-06-09

****

TEST CONDUCTED

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

CONCLUSION

Sample Number	Testing item	Conclusion	Failed component	Failed result
9 (Base)	N/P 3420046 Knob Insert “Material Plateado”	Pass See Result summary	---	---
9 (Plated)	N/P 3420046 Knob Insert “Material Plateado”	Pass See Result summary	---	---

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TEST CONDUCTED

Samples:

Intertek Testing Services de México, S.A. de C.V.
Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150
www.intertek.com

9) Base N/P 342.0046 Knob Insert Material Plateado
9) Plated N/P 342.0046 Knob Insert Material Plateado

TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

TESTING ITEM	**Ω RESULT (ppm)**		Limit
	(9) Base	**(9) Plated**	
Cadmium (Cd) content	ND	ND	0,01% (100 ppm)
Lead (Pb) content	34,95	ND	0,1% (1000 ppm)
Mercury (Hg) content	ND	ND	0,1% (1000 ppm)
Chromium (VI) (Cr^{6+})	ND	ND	0,1% (1000 ppm)

ppm = parts per million based on dry weight of sample.
$\mu g/cm^2$ = microgram per square centimeter.
mg/kg WITH $50cm^2$ = milligram per kilogram with 50 square centimeter.
< = less than.
ND = Not detected.
The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

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

Prepared and checked by：
For Intertek

Laboratory Manager

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

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX11-1041-09 WERE TESTED SEPARATED.

Test method：

Intertek Testing Services de México, S.A. de C.V.
Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150
www.intertek.com

Report No.: MX11-1041-09
Date：2011-06-15

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
9	Chromium VI (Cr^{6+}) content	With reference to USEPA 3060, by EPA 7196	QHU2010-61p76,78	2011-05-26	MELA	20,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
9 (Base)	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	5,0
9 (Plated)	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	125,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
9 (Base)	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	2,0
9 (Plated)	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	50,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
9 (Base)	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-40p141	2011-05-26	RNC	0,25
9 (Plated)	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-40p141	2011-05-26	RNC	1,666

Intertek Testing Services de México, S.A. de C.V.
Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150
www.intertek.com

Report No.: MX11-1041-01
Date：2011-06-16

TEST REPORT

APPLICANT

Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martínez 1800, Col. Magisterio Sección 38, Piedras Negras, Coahuila
Ing. María Valdez

SAMPLE DESCRIPTION

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

Sample Description	NP
Item No.	1) N/P 883030 Clip “Material Plateado”
Country of Origin	NP
Buyer's Name	NP
Supplier's Name	NP
Date sample received	2011-05-19
Testing period	2011-05-23 to 2011-06-09

****

TEST CONDUCTED

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

CONCLUSION

Sample Number	Testing item	Conclusion	Failed component	Failed result
1 (Base)	N/P 883030 Clip “Material Plateado”	Pass See Result summary	---	---
1 (Plated)	N/P 883030 Clip “Material Plateado”	Pass See Result summary	---	---

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TEST CONDUCTED

Samples:

Intertek Testing Services de México, S.A. de C.V.
Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150
www.intertek.com

1) Base N/P 883030 Clip “Material Plateado”
1) Plated N/P 883030 Clip “Material Plateado”

TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

TESTING ITEM	**Ω RESULT (ppm)**		Limit
	(1) Base	**(1) Plated**	
Cadmium (Cd) content	ND	ND	0,01% (100 ppm)
Lead (Pb) content	47,15	ND	0,1% (1000 ppm)
Mercury (Hg) content	ND	ND	0,1% (1000 ppm)
Chromium (VI) (Cr^{6+})	ND	ND	0,1% (1000 ppm)

ppm = parts per million based on dry weight of sample.
µg/cm^2 = microgram per square centimeter.
mg/kg WITH 50cm^2 = milligram per kilogram with 50 square centimeter.
< = less than.
ND = Not detected.
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These Accreditations only apply for the methods listed in such. Not accredited under EMA **Ω.**

Prepared and checked by：
For Intertek

Laboratory Manager

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

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

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX11-1041-01 WERE TESTED SEPARATED.

Test method：

Intertek Testing Services de México, S.A. de C.V.
Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150
www.intertek.com

Report No.: MX11-1041-01
Date：2011-06-16

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1	Chromium VI (Cr^{6+}) content	With reference to USEPA 3060, by EPA 7196	QHU2010-61p76,78	2011-05-26	MELA	20,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1 (Base)	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	5,0
1 (Plated)	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	125,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1 (Base)	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	2,0
1 (Plated)	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p146	2011-05-26	MARY	50,0

Sample Number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1 (Base)	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-40p141	2011-05-24	RNC	0,25
1 (Plated)	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-40p141	2011-05-26	RNC	2,5

Intertek Testing Services de México, S.A. de C.V.
Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150
www.intertek.com

Test Report Number : TWNC00235725

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

Date : Dec 09, 2011

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

Part Description	: VALOX CK 48 BK(RESIN)
Part Number	: 057259
Date Sample Received	: Dec 06, 2011
Date Test Started	: Dec 06, 2011

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

Authorized By:
On Behalf Of Intertek Testing Services
Taiwan Limited

K. Y. Liang
Director

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) 6602-2400 · 6602-2401

Number : TWNC00235725

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)
	Black Plastic Pellet
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	14
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)	1897
Chlorine (Cl)	ND
Bromine (Br)	31855
Iodine (I)	ND
Phthalates	
Di(2-ethylhexyl) Phthalate (DEHP)	ND
Dibutyl Phthalate (DBP)	ND
Benzyl Butyl Phthalate (BBP)	ND
Others	
Hexabromocyclododecane (HBCDD)	ND

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

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

Date Sample Received : Dec 06, 2011
Test Period : Dec 06, 2011 To Dec 09, 2011

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) 6602-2400 · 6602-2401

Test Conducted

(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 2002/95/EC and amendment 2005/618/EC for homogeneous material.

(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-MSD and further HPLC confirmation when necessary.	5 ppm
Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	5 ppm

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Tel: (+886-2) 6602-2888 · 2797-8885 Fax: (+886-2) 6602-2400 · 6602-2401

Test Conducted

(Ⅲ) Test Method:

Test Item	Test Method	Reporting Limit
Halogen Content	With reference to EN 14582:2007 by calorimetric bomb with oxygen and determined by ion chromatography	50 ppm
Phthalates	With reference to EN 14372: 2004, by solvent extraction and determined by GC-MSD	50 ppm
Hexabromocyclododecane (HBCDD)	With reference to USEPA 3540C, by solvent extraction and determined by GC-MSD	10 ppm

Remark: Reporting limit = Quantitation limit of analyte in sample

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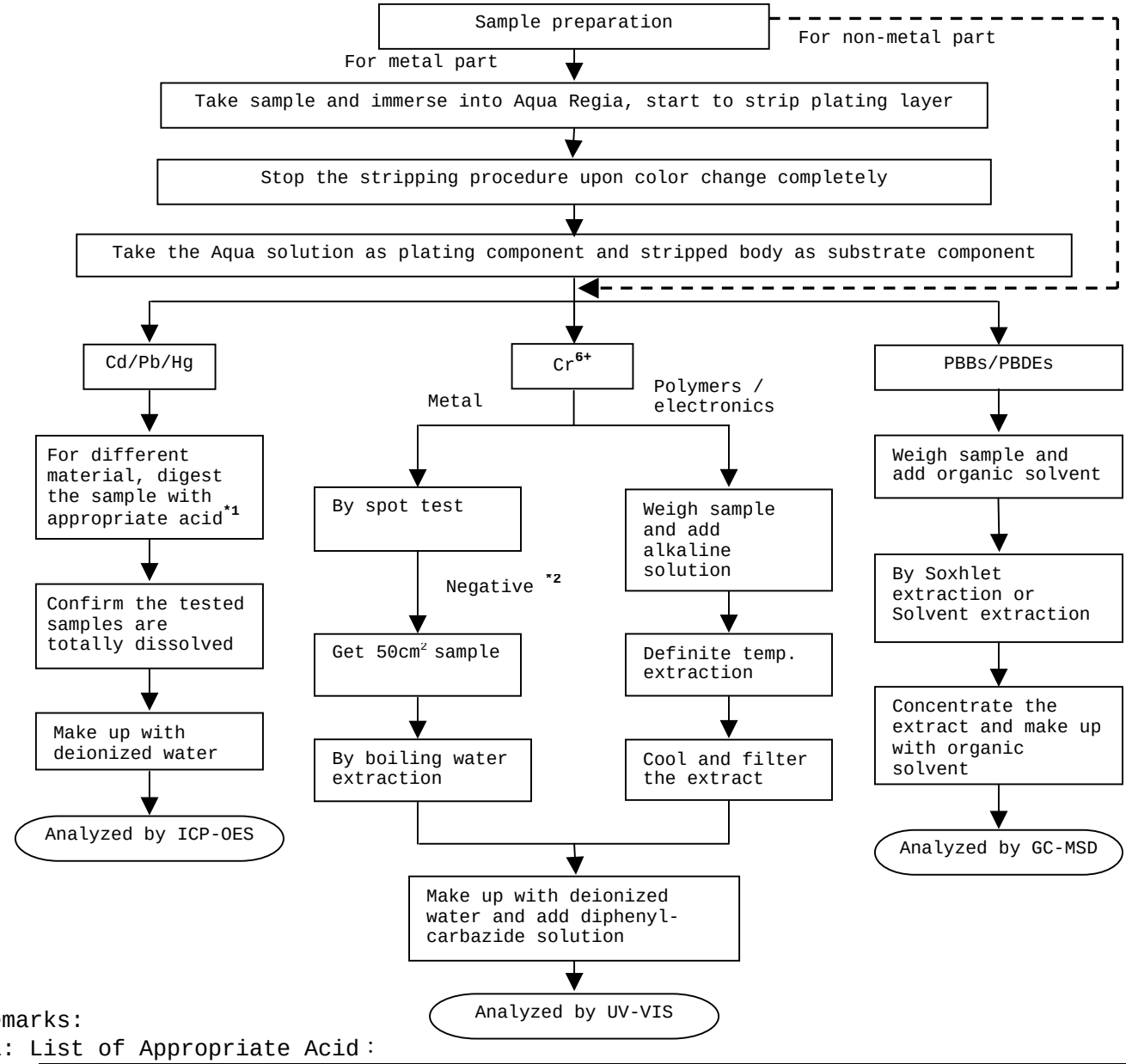
Test Conducted

(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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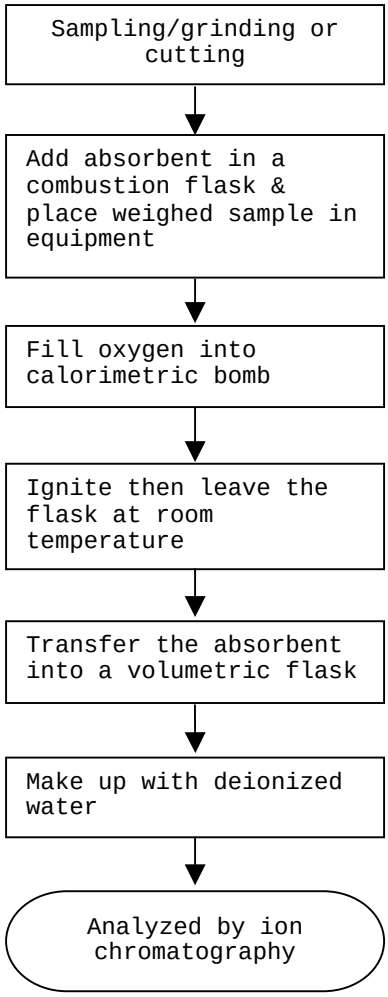
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content

Reference Standard：EN 14582



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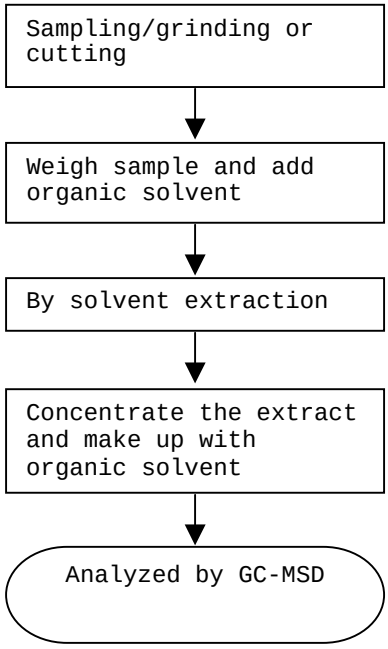
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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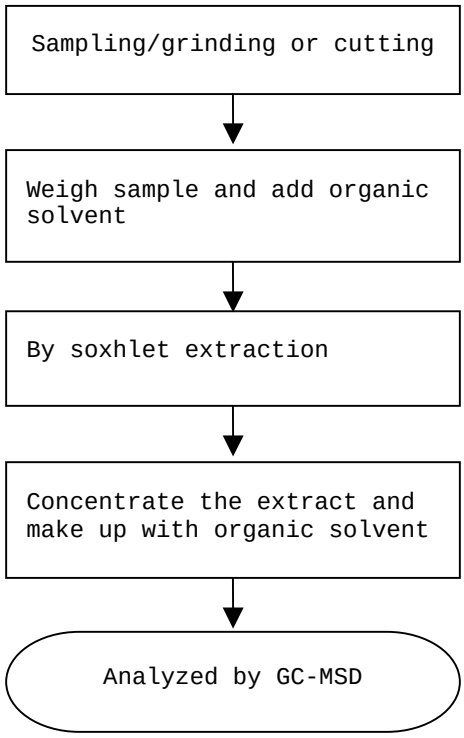
Test Conducted
(Ⅳ) Measurement Flowchart:

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



End of Report

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Number : TWNC00235725

Test Conducted

Photo

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Test Report Number : TWNC00234708

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

Date : Dec 02, 2011

Sample Description:
One (1) group of submitted samples said to be :
Part Description : RYNITE FR530 BK507
Part Number : 057277
Date Sample Received : Nov 28, 2011
Date Test Started : Nov 29, 2011

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

Authorized By:
On Behalf Of Intertek Testing Services
Taiwan Limited

K. Y. Liang
Director

Intertek Testing Services Taiwan Ltd.
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Number : TWNC00234708

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm) Black Plastic Pellet
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	7
Mercury (Hg) content	ND
Chromium VI (Cr^{6+}) content	ND
Polybrominated Biphenyls (PBBs)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)	
Monobrominated Diphenyl Ethers (MonoBDE)	ND
Dibrominated Diphenyl Ethers (DiBDE)	ND
Tribrominated Diphenyl Ethers (TriBDE)	ND
Tetrabrominated Diphenyl Ethers (TetraBDE)	ND
Pentabrominated Diphenyl Ethers (PentaBDE)	ND
Hexabrominated Diphenyl Ethers (HexaBDE)	ND
Heptabrominated Diphenyl Ethers (HeptaBDE)	ND
Octabrominated Diphenyl Ethers (OctaBDE)	ND
Nonabrominated Diphenyl Ethers (NonaBDE)	ND
Decabrominated Diphenyl Ether (DecaBDE)	ND
Halogen Content	
Fluorine (F)	ND
Chlorine (Cl)	ND
Bromine (Br)	ND
Iodine (I)	ND
Phthalates	
Di(2-ethylhexyl) Phthalate (DEHP)	ND
Dibutyl Phthalate (DBP)	ND
Benzyl Butyl Phthalate (BBP)	ND
Others	
Hexabromocyclododecane (HBCDD)	ND

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

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

Date Sample Received : Nov 28, 2011
Test Period : Nov 29, 2011 To Dec 02, 2011

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Number : TWNC00234708

Test Conducted

(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 2002/95/EC and amendment 2005/618/EC for homogeneous material.

(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-MSD and further HPLC confirmation when necessary.	5 ppm

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Test Conducted

(Ⅲ) Test Method:

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

Remark: Reporting limit = Quantitation limit of analyte in sample

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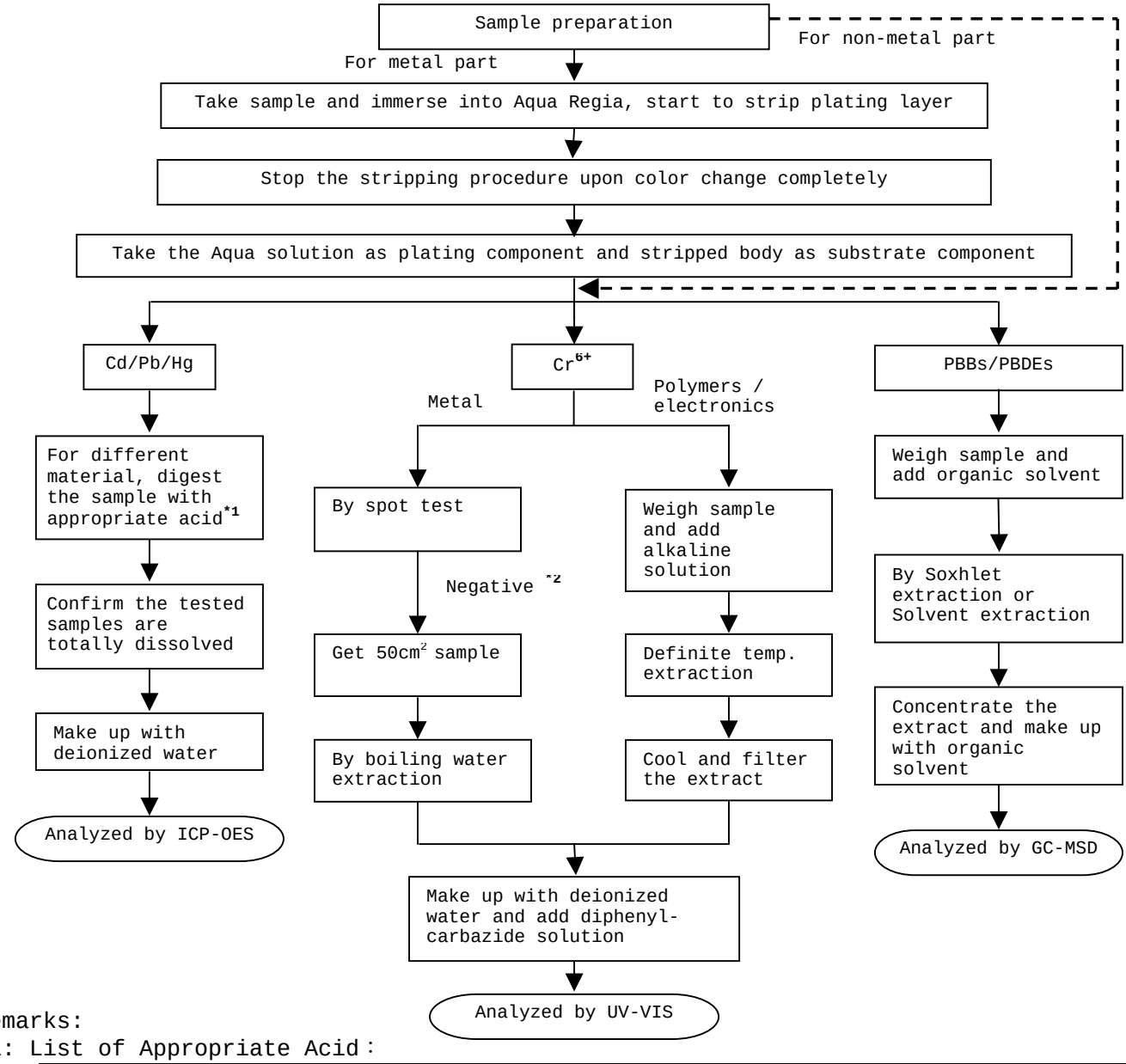
Number : TWNC00234708

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

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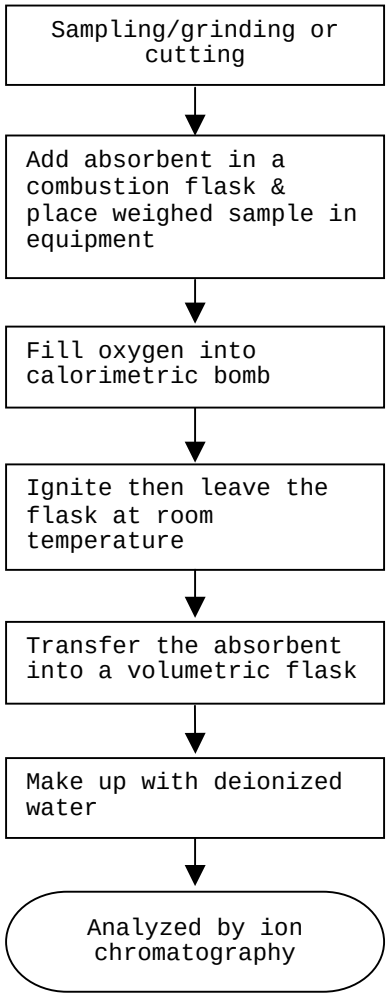
Test Conducted

(Ⅳ) Measurement Flowchart:

Test for Halogen Content
Reference Standard：EN 14582



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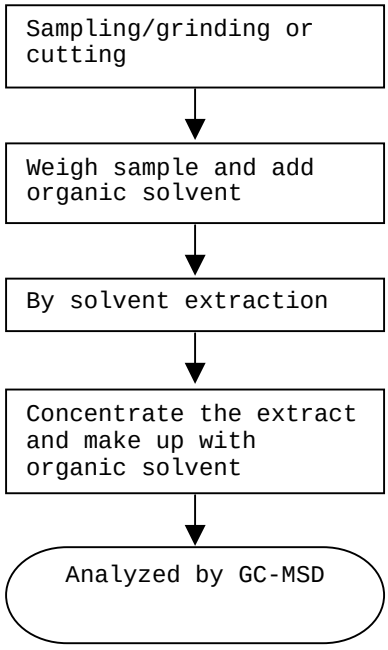
Test Conducted

(Ⅳ) Measurement Flowchart:

Test For Phthalates Contents
Reference Method: EN 14372: 2004



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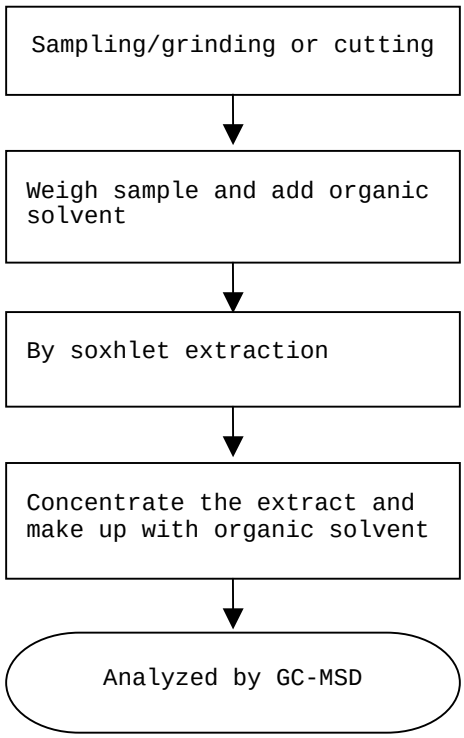
Test Conducted

(Ⅳ) Measurement Flowchart:

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



End of Report

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Number : TWNC00234708

Test Conducted

Photo

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Test Report

Number : TWNC00254448

Date : May 04, 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	: SLEEVE
Part Number	: 342012-4
Date Sample Received	: Apr 24, 2012
Date Test Started	: Apr 26, 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 : TWNC00254448

Test Conducted

(Ⅰ) Test Result Summary :

Test Item	Result (ppm)	
	(1)	(2)
Heavy Metal		
Cadmium (Cd) content	ND	ND
Lead (Pb) content	13	38
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.

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

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

Date Sample Received : Apr 24, 2012
Test Period : Apr 26, 2012 To May 03, 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)

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC 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 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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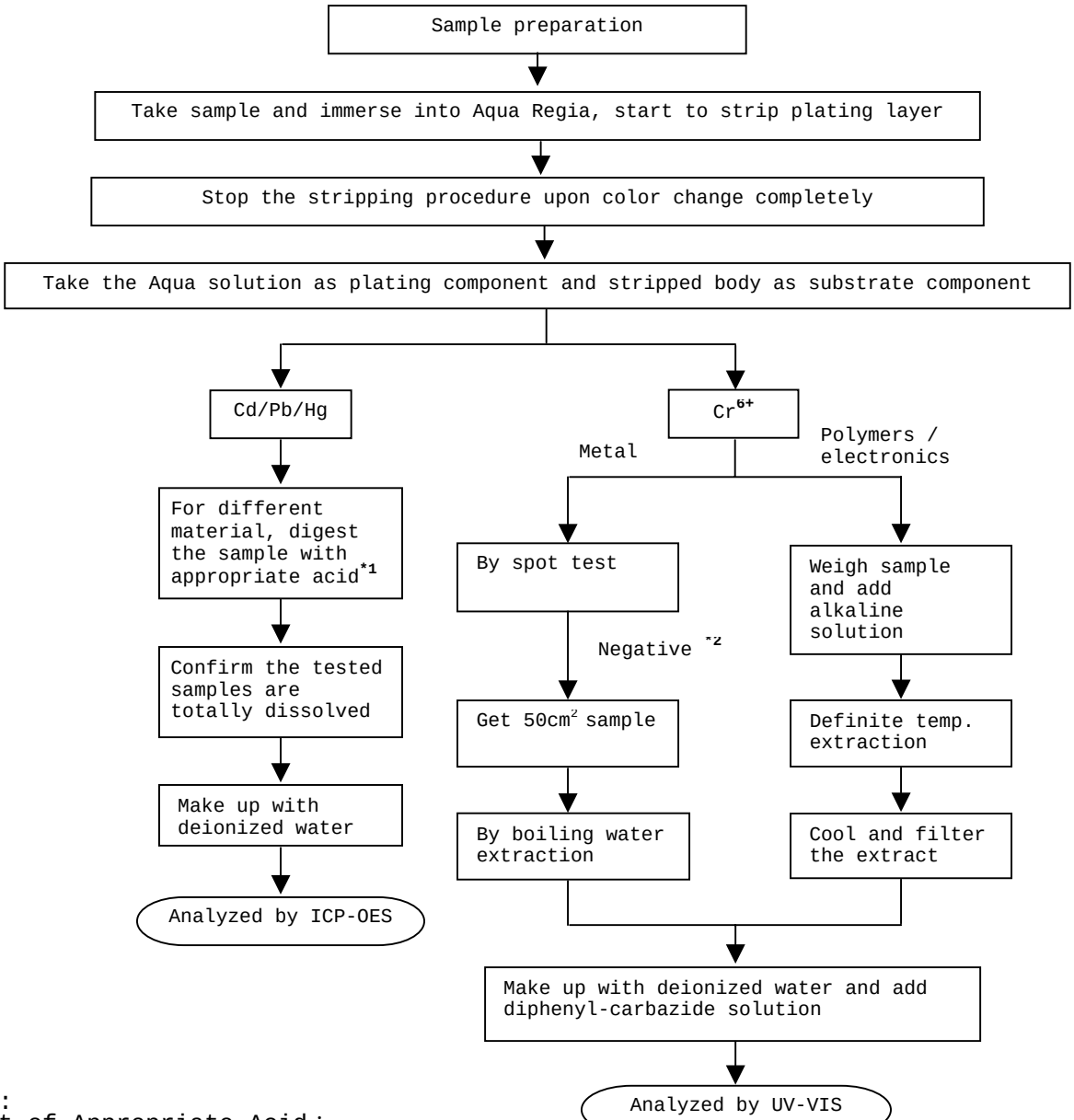
Test Conducted

(Ⅳ) Measurement Flowchart:

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

Reference Standard：IEC 62321 edition 1.0:2008



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 : TWNC00254448

Test Conducted

Photo

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